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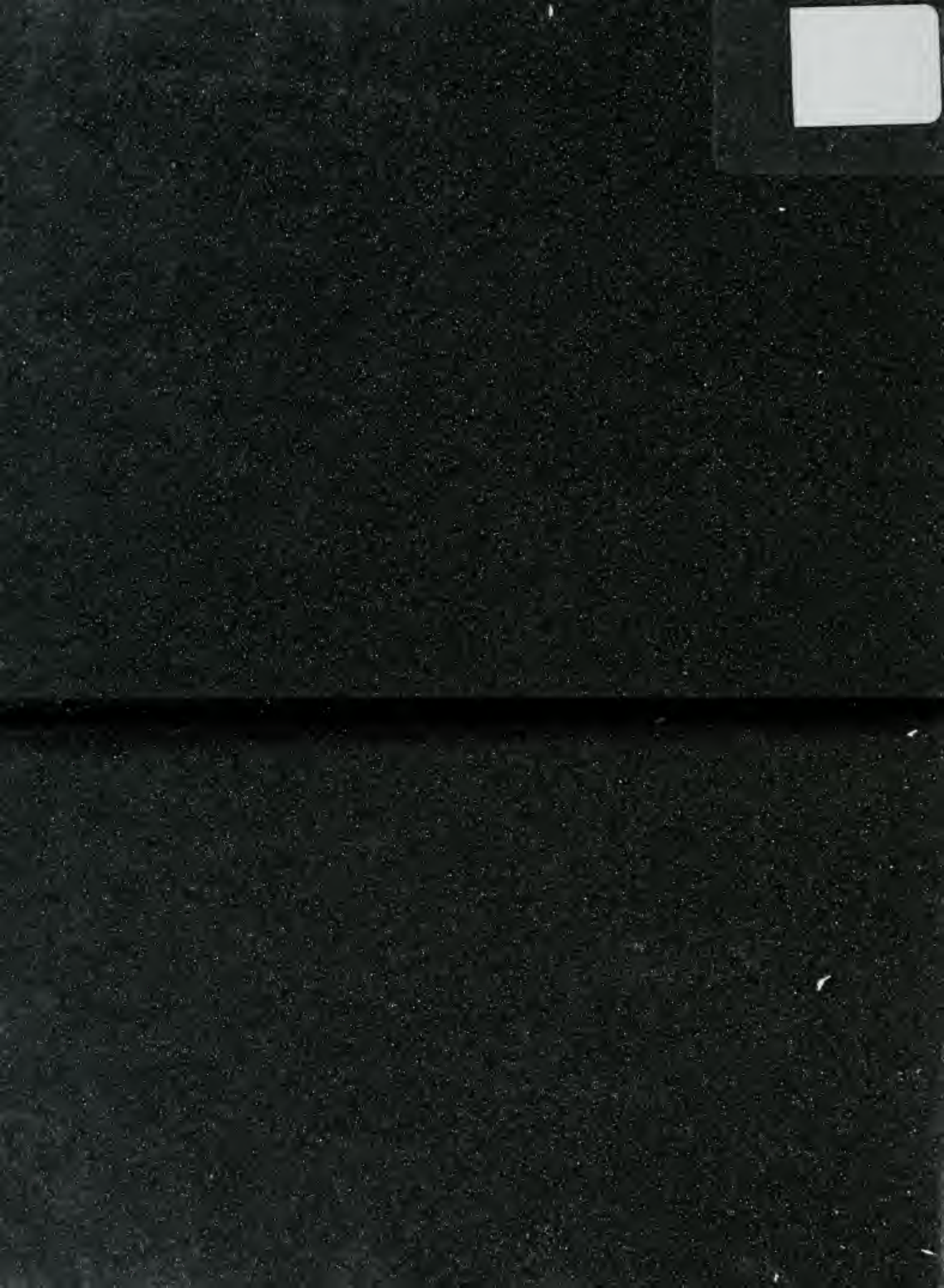
Draft Environmental Impact Statement

Section 36 Neighborhood Plan

June 13, 2001



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DEPARTMENT OF NATURAL
RESOURCES AND CONSERVATION

JUDY MARTZ, GOVERNOR

STATE OF MONTANA

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June 13, 2001

Section 36 Neighborhood Plan & Business & Technology Park

Draft Environmental Impact Statement

Enclosed is a copy of the Section 36 Draft Environmental Impact Statement (DEIS). The DEIS is a disclosure document to help the Department of Natural Resources and Conservation (DNRC) decide two proposed actions related to School Trust Land located in Section 36, Township 29 N, Range 22W, Flathead County, Montana. DNRC will select a plan alternative to help guide the future use and development of Section 36 and decide whether to proceed with a proposal by Hampstead Partners to lease 60 acres of land in Section 36 to construct a business and technology park.

I encourage you to carefully read this document and provide written comments to:

David Greer, Project Leader
DNRC Northwestern Land Office
2250 Highway 93 North
Kalispell, Montana 59901

Comments must be received by July 13, 2001. Along with your comments, please be sure to include your name, address, telephone number and specific reference to this DEIS.

This is a two-decision document. Part I of the DEIS pertains to the evaluation and selection of a preferred land use plan for Section 36. Five alternative plans are evaluated and a preferred alternative is selected. Part II of the DEIS pertains specifically to a proposal to lease 60 acres for development of a business and technology park. Two alternatives are considered and a preferred alternative is identified. An Appendix to the DEIS is available under separate cover and will be distributed upon request. A summary document is also available upon request to provide a brief summary of the DEIS information.

I am pleased to release this document for review and encourage you to respond with comments prior to July 13, 2001.

Sincerely,

Jon Dahlberg
Area Manager, NWLO

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NOTE: THE APPENDICES REFERENCED IN THIS DOCUMENT ARE AVAILABLE AS A SEPARATE DOCUMENT AND AVAILABLE UPON REQUEST.

PART I

Chapter 1 Alternatives Including the Proposed Action

The Montana Department of Natural Resources and Conservation (DNRC) have initiated an environmental review process under the Montana Environmental Policy Act (MEPA), Title 75-1-201, et seq., MCA, to review a number of proposed actions relating to the development of a 620± acre parcel of land held in trust for Montana's common public schools, located in Section 36, Township 29 North, Range 22 West, MPM, in Flathead County, Montana, (hereinafter referred to as Section 36), which is located directly north of Kalispell, Montana. Figures 1 and 2 depict the regional and neighborhood locations of Section 36. The Draft Environmental Impact Statement (DEIS) describes the proposed actions and alternatives to the proposed actions, affected environment, and associated environmental consequences.

This document is formatted to describe 2 proposed actions. Chapters 2, 3, and 4 of Part I primarily apply to analyses related to neighborhood plan alternatives. Part II presents alternative analyses related to a proposed project to construct a business and technology park. The Part I analyses of the plan alternatives have some relationship to the Part II analyses, particularly related to cumulative effects. Chapter I of Part I has application to both proposed actions.

1.1 Proposed Action

A MEPA process is being initiated by DNRC to evaluate the potential environmental impacts of an adopted neighborhood plan for Section 36 and alternatives to the adopted plan (Part I). A second proposed action (Part II) is a proposed business and technology park to be located on 60 acres within the NE ¼ of Section 36.

1.2 Need for the Action

The DNRC participated with a city/county planning process that resulted in adoption of the Section 36 Neighborhood Plan by the City of Kalispell and Board of Flathead County Commissioners. DNRC then solicited requests for proposals consistent with that plan, and received a proposal for a business and technology park. Before deciding whether and upon what terms and conditions to authorize the proposed business park, DNRC must prepare a MEPA review of this proposed action, pursuant to 77-1-121(1), MCA. DNRC proposes a MEPA review to also cover analysis of alternatives to the adopted Section 36 Neighborhood Plan. This review is mandated by the District Court ruling in Montana Environmental Information Center, Inc., and Citizens for a Better Flathead v. DNRC and Montana Board of Land Commissioners, Cause No. BDV-2000-396. The plaintiffs sought and obtained an injunction preventing the DNRC from considering the business and technology park unless a MEPA analysis is conducted on the adoption of the Neighborhood Plan.

Figure 1. Vicinity Map

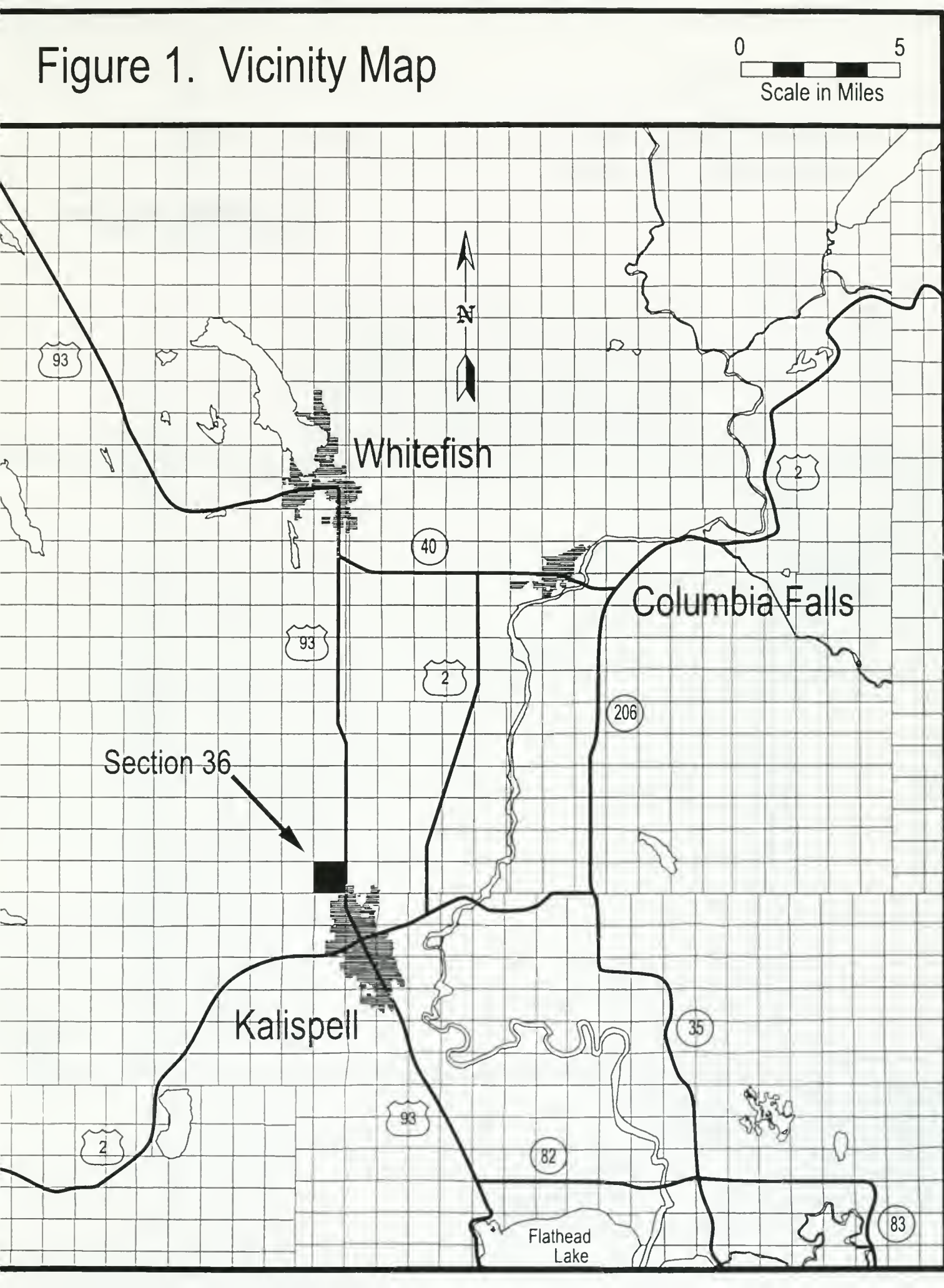
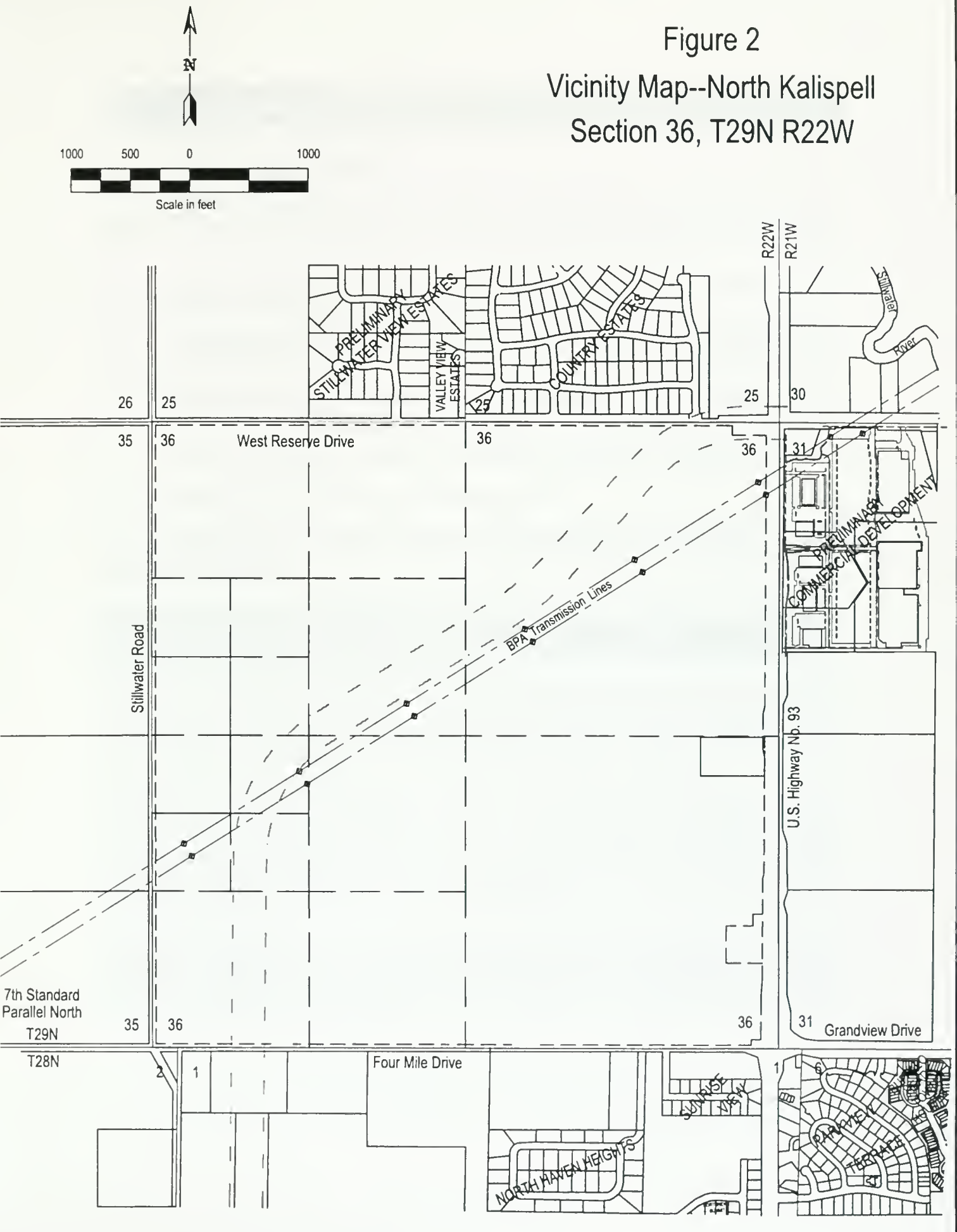


Figure 2
Vicinity Map--North Kalispell
Section 36, T29N R22W



1.3 Objectives of the Action

1.3.1 List of specific objectives

- Develop Section 36 so that the lands are placed to their highest and best use and thereby derive greater revenue for the support of the common school trusts consistent with Section 77-1-601, MCA;

- To prepare a general MEPA review of the adopted plan (and alternatives to the plan) to identify and appropriately address related environmental impacts;

- To integrate into the broader MEPA evaluation, whenever practical, more detailed analyses of specific proposals for the property;

- To satisfy MEPA requirements for a specific land use proposal involving a proposed lease that would permit development of a business and technology park;

- To link proposed actions on Section 36 to a local government decision-making process;

- To simplify subsequent MEPA review of projects; and

- To use the plan as a guide to the future use of the property including creating the basis for implementation strategies associated with zoning, annexation, subdivision review, plan amendments, and extension of services.

1.4 Scope of this Environmental Analysis

The scope of environmental analysis would be limited to the adopted neighborhood plan, alternatives to that plan, and associated implementation strategies. Environmental analyses would be based upon land use scenarios that would be permitted within the context of the adopted plan or alternatives to the adopted plan. Anticipated uses would be integrated into the analyses whenever appropriate. Draft zoning regulations would be proposed to implement the adopted neighborhood plan.

Consequently, the Department would conduct a MEPA review to understand and inform the public of the effects resulting from the above-described action. The environmental review would consider the land uses currently under consideration for Section 36; the potential range of uses and tenants under the neighborhood plan; economic impacts to regional and local communities; employment; traffic generation; demand on city and county services; water quality; and loss of farmland. These and other identified issues would help define alternatives for further analysis.

Part II of this document will examine the alternatives and environmental effects of a proposal from Hampstead Partners to develop a business and technology park on 60 acres within the NE ¼ of Section 36. The description of the affected environment (Chapter 3) and environmental consequences (Chapter 4) presented in Part I of this document have application to the specific project proposal to construct a business and technology park.

1.4.1 History of the Planning and Scoping Process

The Section 36 Neighborhood Plan evolved from a process to participate in a broader community effort to update the Kalispell City-County Master Plan, which was initiated in 1996 by the Flathead Regional Development Office (FRDO)–the agency responsible for land use planning in Flathead County. DNRC hired a professional planning consultant in May 1998 to help represent the interests of DNRC in the planning process. The consultant worked with the "master plan update drafting committees" and the "master plan consensus committee" to help define the most appropriate future use of Section 36. When it became apparent that the City-County planning process was failing to move forward, DNRC continued with the development of a neighborhood plan to help define an appropriate land use designation for Section 36. The planning process associated with the development of the neighborhood plan was subjected to extensive public review and analysis. Over a two (2) year period beginning in May 1998, DNRC sponsored and participated in a wide range of public forums to seek public involvement in planning for the future use of Section 36. In addition to the committee meetings held by the Kalispell City-County Planning Board, DNRC sponsored four (4) public advertised meetings and held more than 10 meetings with other interested parties. The Neighborhood Plan was subject to one (1) informational meeting and public hearings (4 meeting dates) before the Kalispell City-County planning Board, one (1) informational meeting with the Board of Flathead County Commissioners, and public hearings before the Kalispell City Council and the Board of Commissioners. The Neighborhood Plan achieved final adoption through the local process on June 7, 1999.

Another series of pubic meetings and hearings were held by the State Board of Land Commissioners, Kalispell City Council, and Board of Flathead County Commissioners to develop a Memorandum of Understanding (MOU), which helped to clarify how the neighborhood plan would be implemented in joint cooperation with local governments. Following approval of the MOU by the City of Kalispell and Flathead County, the MOU was approved by the Land Board on May 15, 2000. The chronology of events and meetings leading to the adoption of the neighborhood plan and MOU is presented in **Appendix A**.

In June 2000, the DNRC issued a request for proposals within the Mixed Commercial pod of Section 36. A proposal to build a 60 acres business and technology park was ultimately selected for further consideration. School District 5 has also indicated a desire for a 1,200-1,500 student high school for a portion of Section 36 and perhaps a new elementary school at some future date. DNRC is also aware for the need of a new state office building that could locate on Section 36.

As a consequence of the law suit discussed previously in Section 1.2 of this DEIS, DNRC initiated a MEPA process to consider the Section 36 Neighborhood Plan, alternatives to the Plan, and a proposal by Hampstead Partners to lease 60 acres of school trust land in Section 36 to construct a business and technology park. The MEPA process was formally initiated with release of the Initial Proposal and Scoping Document on February 15, 2001. Newspaper coverage included a published editorial on the subject by Bud Clinch, Director of DNRC, in the Daily Inter Lake on February 10, 2001. A display add appeared in the same newspaper on February 16, 2001, announcing availability of the initial proposal. A "flyer" was mailed to 53 individuals/organizations on February 14, 2001 announcing the availability of the Initial Proposal. The mailing list consisted of previous participants in the planning process for Section 36 and other interested parties. A public meeting was held on February 21, 2001 in the Kalispell office of the Montana Fish, Wildlife & Parks (FW&P) to provide an overview of the initial proposal to the interested public. Comments on the Initial Proposal were accepted through March 7, 2001. A front-page article discussing the scheduled meeting appeared in the Daily Inter Lake on February 20, 2001. A follow-up article appeared in the local newspaper on February 23, 2001. Twenty-seven individuals registered attendance at the meeting. DNRC received 35 written comments from the initial scooping process. A subsequent meeting was held with Citizen's For A Better Flathead (CFBF) on March 22, 2001 to discuss issues and expectations related to the MEPA process. Another meeting was held on April 4, 2001 in Missoula between representatives of DNRC, CFBF, and the Montana Environmental Information Center (MEIC). The discussion topic on that date was again issue identification and MEPA process.

A concurrent effort included selection of a multidisciplinary team of experts to evaluate relevant issues, identify alternatives, and perform an effects analysis on the alternatives.

Table 1.0 Technical Experts

Firm	Expertise
HDR Engineering, Missoula	Water & Sewer
Robert Peccia Engineering, Helena	Traffic
Flathead Valley Community College and University of Montana	Economics
Land & Water Consulting, Kalispell	Hydrology
Community Development Services, Butte	Technical Writing
DNRC – David Greer	Land use Planning
DNRC – Marc Vessar	Soils

1.4.2 Relevant Planning Documents

Each of the documents listed below have some relationship to Section 36 and the MEPA review process and are hereby incorporated by reference. Reference citations to other documents are listed in Appendix J.

1.4.2.1 Kalispell City-County Master Plan Year 2010

The Section 36 Neighborhood Plan is a component of the city-county plan. A process to update the current city-county master plan to a "growth policy" plan is underway. A copy of the plan is available from the Flathead Regional Development Office in Kalispell.

1.4.2.2 Section 36 Neighborhood Plan

The neighborhood plan is the subject of the environmental analysis and is included in **Appendix B** (land use map) and **Appendix C** (plan narrative).

1.4.2.3 Memorandum of Understanding

This memorandum was jointly adopted by the City of Kalispell, Board of Flathead County Commissioners, and State Board of Land Commissioners to help define mutual understandings on how the Neighborhood Plan would be implemented. A copy of the MOU is included in **Appendix D**

1.4.2.4 The City of Kalispell Zoning Ordinance

This ordinance would have application to any lands within Section 36 annexed into the city of Kalispell. The SE ¼ of Section 36 is currently within the city limits of Kalispell and is zoned P-1 Public. A copy of the zoning ordinance is available from the Zoning Administrator, City of Kalispell.

1.4.2.5 Flathead County Zoning Regulations

These regulations currently apply to all but the SE1/4 of Section 36. The zoning designation of the land within the county jurisdiction is AG-80, Agriculture. A copy of the zoning regulations is available from the Flathead Regional Development Office, Kalispell.

1.4.2.6 EA Checklist – March 14, 1997

This environmental document was prepared prior to the issuance of a lease to the city of Kalispell for the Kalispell Youth Athletic Complex in the SE ¼ of Section 36. A copy of the checklist is available from DNRC at the address listed in the front of this document.

1.4.2.7 Kalispell Area Transportation Plan (1993) and US Highway 93 • Somers to Whitefish West Final Environmental Impact Study, 1994

Section 36 is bisected by the alignment of the proposed Highway 93 by-pass to Kalispell. The alignment affects the future use opportunities for Section 36. Copies of these documents, which describe the alignment options, are available from the Flathead Regional Development Office.

1.4.2.8 Mountain View Plaza Commercial PUD

A commercial Planned Unit Development (PUD) was approved for property located to the east of Section 36 near the intersection with Highway 93 and West Reserve Drive. Development of the affected property will influence traffic patterns and volume of traffic in the general area of Section 36 as well as availability and extension of utility services. Information on this pending development is available from the Flathead Regional Development Office, Kalispell.

1.4.2.9 City of Kalispell Water and Waste Water Utility Extension Project (UEP) Grant Application

This was a grant application prepared by the City of Kalispell in the fall of 2000 to seek funds from the Treasure State Endowment Program to help finance utility extensions to the north side of Kalispell. A review copy is available at the Public Works Department, City of Kalispell.

1.4.2.10 Preliminary Engineering Analysis for Section 36, April 2000

This is a preliminary engineering report to help determine the feasibility of extending city water and sewer services to Section 36. A review copy is available at the DNRC offices located at the address shown on the front of this document.

1.4.2.11 Proposed Zoning Text for Section 36

DNRC has prepared draft zoning regulations for Section 36 that could be used upon annexation of the property into the city of Kalispell. The regulations would have to be incorporated into the Kalispell Zoning Ordinance via a text amendment and applied as a new zoning district with annexation. These proposed regulations are subject to this MEPA analysis. A copy of the proposed regulations is included in **Appendix E**.

1.4.2.12 Special Lease Proposal

A proposal seeking commercial and industrial development opportunities for Section 36 was released on June 7, 2000 by the DNRC. The offering document establishes the review criteria and ranking process for selecting project proposals. A review copy is available at the DNRC offices located at the address shown on the front of this document.

1.4.2.13 Proposal to Build a Business and Technology Park

DNRC received a proposal in August 2000 from Hampstead Partners to build a technology park on a 60 acre site within Section 36. The proposal was selected for further evaluation under MEPA prior to the issuance of a lease. This proposal is subject to this MEPA analysis. The proposal, map, and related correspondence of the proposed park are included in Appendix F.

1.4.2.14 Decision Notice and MEPA Environmental Assessment for MDT – Pack and Company Land Exchange (10/18/00).

This document has relevant land use and impact assessment information for the area near Section 36. A copy of this document is available at the Flathead County Public Library.

1.4.2.15 Traffic Impact Study – Crosswell Mountain View Plaza (2/01).

This traffic analysis prepared by Marvin & Associates identifies traffic related impacts to the proposed development of Mountain View Plaza and mitigation strategies. Traffic impacts and mitigation strategies may affect project design and project opportunities on Section 36. A copy of this document is available from Marvin & Associates, Billings, Montana.

1.4.2.16 Initial Proposal for Development of the State Special Uses Management Plan, January 19, 2001.

This document is an excellent source of information concerning the current and proposed Special Uses Program of DNRC. Narrative, charts, and diagrams depict processes associated with the (1) land exchange, (2) land reclassification, (3) leasing, (4) Land Use Licenses, (5) easements, (6) land sales, (7) land exchange, (8) and other program functions and activities. A copy is available from the DNRC office at the address shown on the front of this document.

1.4.2.17 New Residential Construction, Flathead County, Montana, 2000 Annual Report, February 1, 2001. Prepared by the Flathead Regional Development Office, Kalispell, MT.

This report identifies trends in residential construction for the cities and rural areas of Flathead County, Montana. The information presented therein is helpful in assessing future housing needs and demands.

1.4.2.18 Flathead County Land Subdivision Report 2000. Prepared by the Flathead Regional Development Office, Kalispell, MT.

This report describes subdivision and other land division activities in Flathead County. The data provides trend information and general indications of future locational needs and/or demands for additional land divisions.

1.4.3 Issues Studied in Detail

The initial purpose of developing the neighborhood plan for Section 36 was to master plan the future use of the property in conjunction with the update to the Kalispell City-County Master Plan. DNRC's involvement eventually led into a more formal neighborhood planning process. Issues evaluated during that process would be carried forward for additional evaluation as part of the MEPA process. Representative issues include the following:

- Types of permitted land uses, including the possibility of a business and technology park, high school, and elementary school—The Kalispell Zoning Ordinance would be a guide to evaluate compatible uses and appropriate uses within a particular use theme.

- Location of permitted land uses—consideration given to proximity to other uses, roads, access, and utilities.

- Internal road layout—consideration given to topography, phasing of development, approaches to other roads, and proposed uses.

- Access to public roads—locations to be minimized with no direct access from individual uses.

- Phasing of development – phase development in consideration of infrastructure availability, costs, and market demands.

- Relationship to local planning processes – consider general land use policy in land use decisions including extension of services.

- Extension of city services – evaluate limitations, opportunities, and costs of extending public water & sewer.

- Annexation – consider annexation of properties into the city of Kalispell.

- Highway 93 alternative route (highway 93 by-pass) through section 36 – recognize use and other limitations of proposed right-of-way and consider related compatible uses.

- Zoning—determine appropriate zoning designations for property and relationship to exemptions.

- Subdivision review – determine appropriate level of review of proposed lease lots by local governing bodies.

- Relationship of uses to the local economy – consider aspects of taxes, payments to the school trust, employment, and market demand.

- Loss of farmland – consider loss of farmland in context to development.

- Traffic generation – evaluate cause-effect relationship of use and density to trip choice and trip generation.

- Water quality – Consider related development actions to water quality.

- Develop standards related to architecture, signage, landscaping, and setbacks – *consider aesthetics in project design and development.*

- Highway entrance aesthetics – views from the highway should have priority consideration.

➢ Relationship of uses to surrounding properties – consider the interrelationship of uses within Section 36 and to those uses nearby.

Many of the same issues were identified via the scoping process initiated for the preparation of the MEPA analysis. A summary list of issues identified from the February and March 2001 public scoping process for the initial proposal is included in **Appendix G**. Examples of additional issues identified through the scoping and ID Team process include the following:

➢ BPA power corridor – examination of allowable uses under the power lines and uncertainty of whether BPA has a perfected easement for the corridor.

➢ Proposed commercial PUD at the SE corner of Reserve Drive and U.S. Highway 93 – relationship of the proposed commercial use to traffic and utility services.

➢ Air quality – effect of development on local air quality.

➢ Noise – effect of noise related to development of Section 36.

➢ Selection criteria for allowable uses – identify methodology to select preferred uses.

1.4.4 Issues Eliminated From Further Study

Alternatives considered must be within the ability of DNRC to implement. Certain issues are beyond the scope of detailed study including:

➢ The plan would not evaluate alternatives that require changes to the Enabling Act, Montana Constitution, local or state statutes.

➢ The Kalispell Youth Athletic Complex is under a 40 year lease (renewable to 45 years) and is therefore not subject to change by this environmental impact review process.

➢ Reasonable alternatives would be generated from reasonable issues. DNRC would attempt to evaluate a variety of land use alternatives but only reasonably foreseeable uses can be studied in detail. Other possibilities can only be speculative. Incomplete or unavailable information will make the broader plan analyses difficult. Evaluation of an endless combination of possibilities is beyond the scope of this study.

➢ Defining and requiring energy-efficient structures to be built by all lessees.

➢ Defining and requiring that jobs associated with developed uses on Section 36 be "high paying".

1.5 Decisions That Must Be Made

DNRC would use the MEPA process to select a plan alternative and implementation strategies (annexation, zoning, subdivision review, extension of utilities, etc) to guide future development choices within Section 36. An analysis would also be conducted to select a preferred alternative associated with the pending proposal to build a business and technology park.

The Area Manager for Northwestern Land Office of the Department of Natural Resources and Conservation is the decision-maker for this Environmental Impact Statement. The Manager would evaluate the alternatives generated from the EIS process to select the plan alternative that best meets the objectives of the action. A separate decision document would apply to the proposed business and technology park as further described in Part II of this document.

1.6 Applicable Legal and Regulatory Requirements and Coordination

1.6.1 Legal Requirements

Section 36 is part of the system of school trust lands granted to the state of Montana in 1889 by the Congress of the United States. The purpose of this land grant was for the monetary support of common schools. The Enabling Act of 1889, Montana Constitution, Montana statutes, and case law all give guidance as to how these lands are to be managed for the benefit of Montana's public schools. The Trust Land Management Division of the DNRC has the management responsibility for these lands and is obligated to secure the largest measure of legitimate and reasonable return for the school trusts. The Section 36 Neighborhood Plan [and proposed uses for Section 36] would be specifically administered under the Special Uses Management Bureau of the Trust Land Management Division of DNRC. The provisions of SB 376 would apply to subsequent processes involving local review of proposals on Section 36 (i.e. annexation, zoning, subdivision review).

1.6.2 Regulatory Requirements

The city, county, state and federal laws that apply to trust lands are essentially those that also apply to private lands, with the addition of compliance with MEPA. These include air and water quality laws, the Antiquities Act and the Endangered Species Act. There are several state law exceptions that apply to state land including: 1) MCA 76-2-402, which applies when an agency proposes to use public land contrary to local zoning regulations, and; 2) MCA 76-3-205(2), which exempts state land from subdivision requirements unless the division creates a second parcel for sale, rent or lease for residential purposes.

1.6.3 Coordination Requirements

The proposed actions would require close coordination with the City of Kalispell and Board of Flathead County Commissioners. This would include subsequent processes involving city and/or county decisions affecting annexation, zoning, subdivision, plan amendments, and extension of services. Coordination would also be necessary with the Montana Department of Transportation and Flathead County Road Department.

Chapter 2 Alternatives Including the Proposed Action

2.1 Introduction

Chapter 2 describes the alternatives developed in response to issues identified by interested individuals and agencies. Five alternatives are evaluated. Alternative A, the no action alternative is a status quo alternative. Alternative B is the Section 36 Neighborhood Plan as jointly adopted by the City of Kalispell and Board of Flathead County Commissioners, including the related Memorandum of Understanding and draft zoning regulations. Alternative C is a plan alternative that would increase opportunities for technology uses and reduce opportunities for large retail uses. Alternative D would alter the phasing schedule of the adopted Section 36 Neighborhood Plan by allowing schools and other large office campus facilities to develop in the early phases of plan implementation and this alternative would also seek a land exchange to promote development of single family dwellings in the SW ¼ of Section 36. Alternative E would allow application of traditional City of Kalispell Zoning Classifications for areas designated for use as "Residential", "Office", and "Commercial".

2.2 History and Process Used to Formulate the Alternatives

The purpose of this environmental review is to disclose the environmental consequences of the adopted Section 36 neighborhood plan and alternatives to the plan and to choose an alternative that is appropriate to the property and broader community, based upon a full range of environmental, legal, social, economic, land use, and political considerations. The neighborhood plan is an alternative since it reflects current public land use policy for the property. The adoption of the plan adhered to established local procedures for adoption/amendment to Mater Plans (growth policies). The net affect of that process was the identification of a preferred land use alternative for the property via a public participation process. The other identified alternatives evolved from issues identified since adoption of the neighborhood plan, largely as a result of litigation proceedings, and from a MEPA scoping process initiated in February 2001 by the DNRC.

2.3 Alternative Design, Evaluation, and Selection Criteria

Identification of alternatives to the adopted Section 36 Neighborhood Plan could be endless, ranging from permitting "anything" to maintaining the current status quo. The "State" is viewed by local land use regulatory agencies as being exempt from most laws related to planning, zoning, and subdivision review. This would permit tremendous land use flexibility but fails to recognize other political, technical, and social considerations. The ultimate goal for Section 36 would be to identify the best mix of land uses as identified through a wide array of considerations. To help achieve the desired objectives of the MEPA analysis and to address identified issues, the following criteria were considered when selecting and formulating alternatives:

- Relationship of uses within the Section and to those outside the property;
- Physical aspects of the property;
- Service limitations/capabilities;

- Recognition of certain inherent or proposed constraints to development;
- Timing of development; and
- Recognition of local and regional economic influences and conditions.

2.3.1 Technical Design Requirements

The future use of Section 36 cannot be predicted. However, the effects of development can be anticipated by examining cause/effect relationships. To help define various cause/effect relationships with development of uses on Section 36, plausible development scenarios were identified and evaluated. Components to the scenarios included information relative to (1) type of use, (2) size (sq ft) of building, (3) location of use, (4) size of lease lot, (5) value of building, (6) number of employees, and (7) timing of development. The combination of these variables can be endless so an objective was to develop reasonable scenarios based upon reasonable assumptions. **An attempt was made to create scenarios that would reflect different intensities of development to identify a range of possible effects. The resulting effects analysis would help provide a framework for identifying, selecting, and/or rejecting alternative land use plans for Section 36.** Cause/effect relationships to development scenarios were evaluated relative to the following variables:

- Water demand;
- Sewer demand;
- Traffic;
- Employment;
- Taxes;
- Lease payments; and
- Natural/Physical environment (wildlife, vegetation, soils, topography, aquifer).

Each land use development scenario includes a benchmark description of the existing situation for Section 36 (Table 2.1). This is followed by a series of development scenarios (Tables 2.2, 2.3, and 2.4). The land use pod descriptions correlate to the Section 36 map. The development scenarios are examples of how Section 36 could ultimately develop and are defined only for the purpose of establishing a range of cause/effect relationships. Each of the scenarios identifies build-out examples over a period of 20 years, despite acknowledgement in the adopted Section 36 Neighborhood Plan that plan implementation would likely take decades to fully implement. Scenario 1 is a development scenario that reflects a status quo philosophy, wherein agricultural practices would continue to persist in all but the SE ¼ of Section 36. The lease of the SE ¼ of Section 36 for developed recreation facilities would be valid for a 40 year period. Development scenario 4 probably compresses 40 years of anticipated development into 20 years. Alternatively, development scenario 2 may more accurately reflect the pace of development in the next 20 years. Scenario 3 could be considered a moderate rate of development. It is impractical to predict what might develop beyond 20 years but build-out descriptions were necessary to help define the full range of possible effects from developing Section 36. **The development scenarios are not plan alternatives.** They are the technical basis for evaluating alternatives to the plan.

Each scenario would be modeled for effects on traffic, water, sewer, and various elements of the economy. The modeling will consider the rate, type, and location of development (Land Use POD). The effects from the analyses can be used to help define an acceptable range of plan alternatives

based upon considerations of impacts to such variables as water delivery, sewage treatment, traffic, and employment.

Table 2.1 Development Scenario 1

Phase	Mixed Commercial	Mixed Professional	Mixed residential	SE1/4 Section
Existing	Agriculture	Agriculture	Agriculture	DNRC Office/shop complex
				5 soft ball fields
				5 pee wee majors fields
				7 soccer fields
0-5 years	Agriculture	Agriculture	Agriculture	As above, plus
				4 softball fields
				7 soccer fields
				3 t-ball fields
				5 pee wee minors
				4 Babe Ruth fields
				4 pee wee majors or 4 little guy football fields
6-10 years	Agriculture	Agriculture	Agriculture	As above, plus
				Office building to replace DNRC offices
				Ice skating rink
11-20 years	Agriculture	Agriculture	Agriculture	Full build-out (approximately 150 acres)

Table 2.2 Development Scenario 2

Phase	Mixed Commercial	Mixed Professional	Mixed Residential
Existing	Agriculture (118 acres)	Agriculture (184 acres)	Agriculture (152 acres)
0-5 years	Tech Park (120,000 sf)	High School (1,250 – 1500 students)	Agriculture (152 acres)
	Retail (27,000 sf)	Office (7,000 sf)	
	Non lot area (104 acres)	Non lot area (104 acres)	
6-10 years	Tech Park (180,000 sf)	Convenience store (7,000 sf)	Elementary School (500 students)
	Motel (131 units)	Office (27,000 sf)	Apartment (100 dwelling units -)
	Restaurant (6,100 sf)	Land Management Agency Campus (105,000 sf)	Non lot area (acres)
	Non lot area (82 acres)	Dental & Medical Clinic (21,000 sf)	
		Non lot area (97acres)	
11-20 years	Tech Park (300,000 sf)	Worship Center (300 members)	Worship Center (300 members)
	Retail store (54,000 sf)	Office Park (54,000 sf)	Retirement center (150 unit)
	Non lot area (49 acres)	Retirement center (150 units)	Nursing home (100 bed)
		Convenience mart (travel agency, beverage shop, deli, convenience grocery-15,000 sf)	Apartment (400 dwelling umits)
		Non lot area (77 acres)	Non lot area (58 acres)

Table 2.3 Development Scenario 3

Phase	Mixed Commercial	Mixed Professional	Mixed Residential
Existing	Agriculture (118 acres)	Agriculture (184 acres)	Agriculture (152 acres)
0-5 years	Tech Park (120,000 sf)	High School (1,250 – 1500 students)	Agriculture (152 acres)
	Office (40,000 sf)	Office (7,000 sf)	
	Discount retail (130,680 sf)	Non lot area (104 acres)	
	Non lot area (98 acres)		
6-10 years	Tech Park (180,000 sf)	Bank (13,536 sf)	Elementary School (500 students)
	Motel (131 units)	Convenience store (7,000 sf)	Apartment (100 dwelling units)
	Restaurant (6,100 sf)	Office (27,000 sf)	Non lot area (112 acres)
	Non lot area (76.5 acres)	Office (54,000 sf)	
		Medical Clinic (21,000 sf)	
		Non lot area (97.4 acres)	
11-20 years	Tech Park (300,000 sf)	Worship Center (300 members)	Worship Center (300 members)
	Home office supply (25,000 sf)	Barber & Beauty Services (3,000 sf)	Retirement center (150 unit)
	Drive-thru restaurant (3,000 sf)	Office Park (60,000 sf)	Nursing home (100 bed)
	Grocery Store (57,000 sf)	Retirement center (150 units)	Offices (110,000 sf)
	Retail store (45,000 sf)	Medical office (15,000 sf)	Apartment (400 dwelling units)
	Non lot area (39 acres)	Convenience mart (15,000 sf)	Non lot area (58 acres)
		Office buildings (60,000 sf)	
		Car wash (3,200 sf)	
		Private school (300 students)	
		Fire station	
		Equestrian center	
		Recreational facility	
		Non lot area (52.5 acres)	

Table 2.4 Development Scenario 4

Phase	Mixed Commercial	Mixed Professional	Mixed Residential
Existing	Agriculture (118 acres)	Agriculture (184 acres)	Agriculture (152 acres)
0-5 years	Office (26,000 sf)	High School (1,250 – 1500 students)	Apartments (150 du)
	Discount warehouses – 2 @ 130,680 sf each	Veterinary (7,000 sf)	Non lot area (147 acres)
	Restaurant (6,100 sf)	Office Complex (54,000 sf)	
	Grocery store (58,000 sf)	Non lot area (98 acres)	
	Office Supply (25,000 sf)		
	Fast Food Restaurant (2,350 sf)		
	Non lot area (98 acres)		
5-10 years	Bank (15,000 sf)	Bank (13,536 sf)	Apartments (800 dwelling units)
	Motel (110 units)	Convenience store (7,000 sf)	Worship Center (300 members)
	Retail (45,000 sf)	Office (27,000 sf)	Office (110,000 sf)
	Non lot area (92 acres)	Medical Clinic (45000 sf)	Non lot area (113 acres)
		Convenience Mart (15,000 sf)	
		Worship Center (300 members)	
		Barber & Beauty (3,000 sf)	
		Non lot area (88 acres)	
10-20 years	Shopping Mall (200,000 sf)	Office Park (240,000 sf)	Retirement Center (150 units)
	Restaurants – 2 @ 7,000 sf each	Retirement Center (250 units)	Apartments (650 dwelling units)
	Bowling Alley (20 lanes with restaurant & bar)	Medical Offices (30,000 sf)	Non lot area (80 acres)
	Motel & Convention Center (300 rooms, restaurant, bar & 16,000 sf of convention space	Offices (60,000 sf)	
	Specialty retail (80,000 sf)	Car Wash	
	Office (66,000 sf)	Private School (300 students)	
	Non lot area (52 acres)	Fire Station	
		Non lot area (40 acres)	

2.3.2 Outcome Requirements

The purpose of the modeling is to identify the relationship of development to identified effects. The degree, amount, type, and timing of effects can be used to identify an acceptable level of development. The effects analysis offers choices and options for development based upon considerations of costs, benefit to the Trust and environmental effects.

2.3.3 Environmental Protection Requirements

All specific project proposals on school trust land within Section 36 would be subject to a MEPA analysis. At that time, each project proposal would be evaluated against local, state, and national laws related to water quality, air quality, threatened and endangered species, and cultural/historical features.

2.4 Alternatives Considered but Eliminated From Detailed Study

2.4.1 Tree Farm

Utilizing Section 36 as a tree farm was one suggested use of the property. A tree farm can be interpreted in a variety of ways, including a silvicultural practice to grow trees for commercial harvest, a Christmas tree operation, or a plant nursery for growing live trees for commercial sale. In all instances, with the possible exception of a plant nursery, the income to the trust from each of these activities is not likely to exceed the current annual income from existing agricultural leases on Section 36. A large number of Christmas tree farms in Flathead County are being converted on an annual basis to fields for grain crops due to the poor market conditions for Christmas trees. A tree rotation (60 to 80 years) for commercial timber would leave the trust without a constant or predictable income stream. Local demands for nursery stock are probably satisfied by existing nurseries in the area. Regardless of the economic viability or reliability of a tree farm operation, the existing neighborhood plan does not preclude this land use activity in any of the land use pods (except for the ball field lease area). Proposals for a tree nursery can be accepted with any special lease proposal but must be successful in a competitive bidding process.

2.4.2 Residential Theme

A residential theme for a majority of the property was suggested by some responders to the initial scoping document as a reasonable alternative for the property. When considered with other comments, the preferred residential use would be single-family dwellings as opposed to apartments or other high density uses. Commercial use opportunities would be virtually excluded but some allowance might be appropriate for office uses in the area along U.S. Highway 93.

This alternative was eliminated from detailed study for the following reasons:

- Sale of the property to a private party for development of residential uses is not practical based upon the obvious commercial value for some of the property and the inability of DNRC to sell property without first subdividing Section 36 into 5 acre lots and offering the subdivided lots for sale at a public auction (see MCA 77-2-310);

- Residential dwellings, exclusive of other uses, is not the highest and best use of the property;

- The BPA power lines and proposed highway by-pass are not conducive to residential neighborhoods;

- The historical demand for residential dwellings could not justify reserving approximately 400 acres for residential use;

- Infill opportunities for commercial uses close to Kalispell would be foreclosed by this alternative and could force commercial uses to locate elsewhere in areas less conveniently located to Kalispell and with less review authority by local government;

- Leasing lots for single family use is not practical given mortgage obligations and other financial and ownership considerations;

- Administration of hundreds of residential lease lots cannot be justified or supported by the anticipated income to the trust;

- Exchange of Section 36, excluding the SE ¼, to a private party who would develop the property for residential uses is not practical since the exchange would be based upon a market value that would reflect a higher and better use for the property than "residential"; and

- This alternative would not meet the objectives set forth in this EIS.

2.5 Description of Proposed Alternatives

Five alternatives are proposed. A mapped representation of each alternative is presented at the end of this Section.

2.5.1 Assumptions common to all alternatives:

- The baseline comparison to all proposals is the Section 36 Neighborhood Plan adopted in 1999 and the related MOU adopted in 2000;

- Alternative proposals to the 1999 plan may require amendments to the adopted plan. The decision-making authority for plan amendments is the city and county. Should any proposed alternative fail to achieve local approval, the existing plan as originally adopted shall persist and guide future decisions affecting the property;

- The plan area subject to all proposed alternatives is the school trust land located in Section 36 and excludes the 20 acre private parcel located near the west end of Section 36;

- The BPA power lines are not designed to accommodate any uses under the facilities, including structures, roads, and parking. The lines would need to be redesigned and elevated to permit roads, including the highway 93 by-pass, and parking;

- The proposed Highway 93 by-pass alignment is recognized as a future possibility within Section 36 and development is being sited and phased accordingly. The by-pass alignment will need to be purchased by MDT and the Board of Land Commissioners has decision authority to deny or approve the sale of an easement to accommodate the by-pass alignment through Section 36;

- No individual developments or use will be permitted to have direct access onto a perimeter public roadway;

- Improvements necessary to serve a developed use on school trust land will be the responsibility of the lessee;

- Reclassification to Class 4 lands will occur concurrent with any change of use from Agriculture;

➢ Except for the No Action Alternative, property will be annexed into the city of Kalispell prior to or concurrent with development;

➢ Except for the No Action Alternative, development of the property will be regulated by city zoning;

➢ Except for the No Action Alternative, development will have service connection to city of Kalispell infrastructure;

➢ Except for the No Action Alternative, development will be subject to subdivision review;

➢ Except for the No Action Alternative, a beneficial use tax will be assessed for all non tax-exempt improvements and related lease lots; and

➢ Except for the No Action Alternative, the provisions of the MOU shall be common to all alternatives.

2.5.2 Alternative A – No Action

This action alternative would promote a "status-quo" scenario for the school trust land in Section 36. Under this alternative, the following would occur:

- Continued agricultural leasing of the SW ¼, NW ¼, and NE ¼ of Section 36;
- Prohibition of future non-agricultural uses for the SW ¼, NW ¼, and NE ¼ of Section 36;
- Maintenance of the existing AG-80 zoning classification for the SW ¼, NW ¼, and NE ¼ of Section 36;
- Recognition of the existing lease with the city of Kalispell for 134 acres of land in the SE ¼ of Section 36 for use as sports fields, including anticipated completion of the accepted development plan for the lease area;
- Prohibition of any major deviations from the sports field site plan as reviewed by a MEPA document issued on March 14, 1997;
- Prohibition of any easements that would provide water & sewer extensions through the property, including water storage and distribution facilities;
- Restricting the current well in the SE ¼ of Section 36 to irrigation use only;
- Providing for routine and continued use and expansion of the existing DNRC offices located in the SE ¼ of Section 36; and
- Prohibition of annexation into the city of Kalispell.

2.5.3 Alternative B – Section 36 Neighborhood Plan

This action alternative would be the neighborhood plan that was adopted jointly by the city of Kalispell and Board of Flathead County Commissioners in 1999. The adopted plan is included in **Appendix C**. The plan consists of a written narrative of goals and policies and a land use map that identifies land use pods of "Mixed Commercial", "Mixed Residential", "Mixed Professional", and "Sport Fields". This action alternative also includes the Memorandum of Understanding (MOU) approved by DNRC, City of Kalispell, and Flathead Board of Commissioners in 2000 (refer to **Appendix D**). Implementation of the plan would include adoption and application of the zoning classification included as part of the initial proposal and included in **Appendix E** of this document.

2.5.4 Alternative C – Section 36 Neighborhood Plan: Modified Commercial

This action alternative would alter the Mixed Commercial boundary of the existing Section 36 Neighborhood Plan by extending the boundary to include the entire NE ¼ of Section 36. The boundary

of the Mixed Professional POD would be correspondingly reduced. All other aspects of the 1999 Section 36 Neighborhood Plan would not be altered. Specific provisions of this alternative include:

- The extended area of the Mixed Commercial POD would be held as a reserve area for expansion of technology uses beyond the original POD area as described by the 1999 Section 36 Neighborhood Plan;
- That portion of the Mixed Commercial POD lying southerly of the by-pass alignment would offer leases primarily to business (offices) and technology uses and compatible commercial uses, such as small retail convenience uses (delis, restaurants, copy shop, "wired" motel, etc). Retail stores exceeding 10,000 sf per store front will not be permitted. No retail will be permitted until at least 20,000 sf of non-retail space is leased and operating within the POD;
- Expansion of business and technology uses into the expansion area shall not be permitted until at least 60% of the originally-sized Mixed Commercial POD is leased for development;
- If business and technology uses fail to achieve a 40,000 sf floor area threshold within 5 years following the Record of Decision for this EIS, then the original Mixed Commercial and Mixed Professional boundaries of the 1999 Neighborhood Plan shall be restored and the retail restrictions removed to permit the uses anticipated by the 1999 Section 36 Neighborhood Plan;
- If business and technology uses fail to achieve a 120,000 sf floor area threshold within 10 years following the Record of Decision for this EIS, then the boundaries of the original Mixed Commercial POD shall be restored to the boundaries of the 1999 Section 36 Neighborhood Plan and the retail restrictions removed to permit the uses anticipated by the 1999 Section 36 Neighborhood Plan; and
- The draft zoning text described in Section 1.4.2.11 would be the basis for zoning the plan area.

2.5.5 Alternative D – Section 36 Neighborhood Plan: Modified Professional & Residential

This action alternative recognizes the near term needs for two possible school sites, provision for large campus needs for resource management agencies, and provision for single family dwellings. The school sites and office campus have large site requirements and no need to be closely associated with urban-scale development. The provision of single family home opportunities would be enhanced if a portion of the property was held in private ownership. The provisions of the 1999 Section 36 Neighborhood Plan would not be altered except as set forth below. Specific provisions of this alternative include the following:

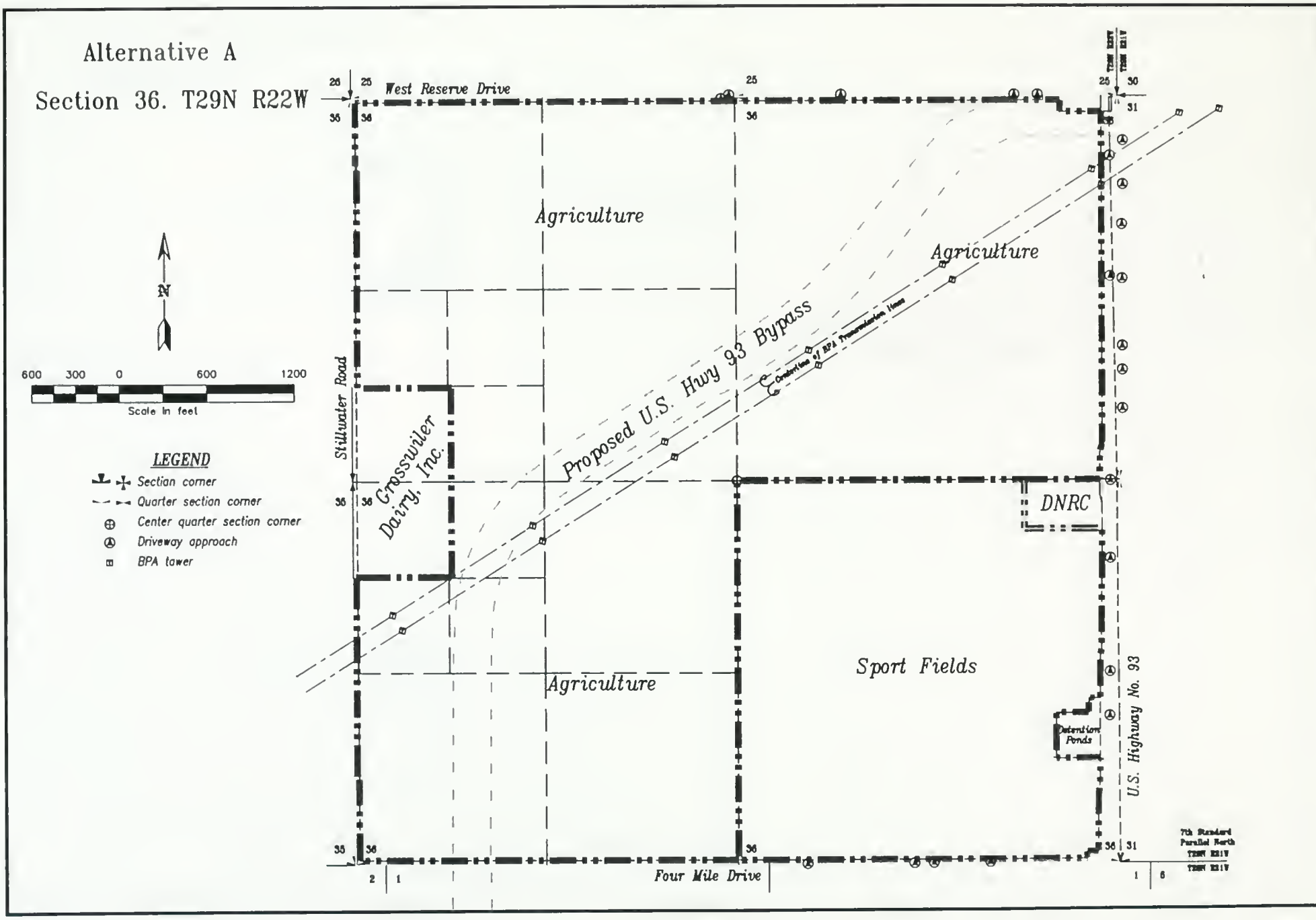
- Retain the original land use POD boundaries and permitted uses as described in the 1999 Section 36 Neighborhood Plan;
- Recognize the need for a near term high school facility with a campus area of 40 to 80 acres in the westerly portion of the Mixed Professional POD. "Schools" would be exempt from the 2010 development limitation on the west side of the Section as identified by the 1999 Section 36 Neighborhood Plan;
- Provide an intersection location at West Reserve Drive and Stillwater Road for a 60 acre natural resource agency campus. The campus would be exempt from the phasing limitations identified in the 1999 Section 36 Neighborhood Plan;
- Recognize the need for a future elementary site in the Mixed Residential POD. "Schools" would be exempt from the 2010 development limitation on the west side of the Section as identified by the 1999 Section 36 Neighborhood Plan;
- Site reservations for either the schools or the office campus would expire in the eleventh year following issuance of the Record of Decision for this EIS;
- The SW ¼ of Section 36, excepting the private tract and the purchased school site, shall be offered as a land exchange to help facilitate sale of residential lots. The exchange will recognize that the subject property is master planned and zoned for residential uses;

- If the land exchange process is unsuccessful for lack of interest by the private sector or other reason, the land shall retain all rights and opportunities for the State of Montana as originally anticipated by the 1999 Section 36 Neighborhood Plan; and
- The draft zoning text described in Section 1.4.2.11 would be the basis for zoning the plan area.

2.5.6 Alternative E – Section 36 Neighborhood Plan: Traditional Zoning

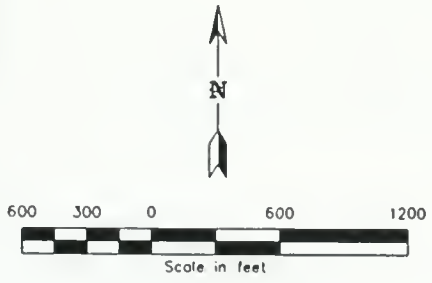
Instead of seeking to implement the 1999 Section 36 Neighborhood Plan with performance-based zoning as suggested in the Initial Proposal, traditional zoning designations would be applied to each land use POD from the Kalispell Zoning Ordinance. Specific provisions of this action alternative include the following:

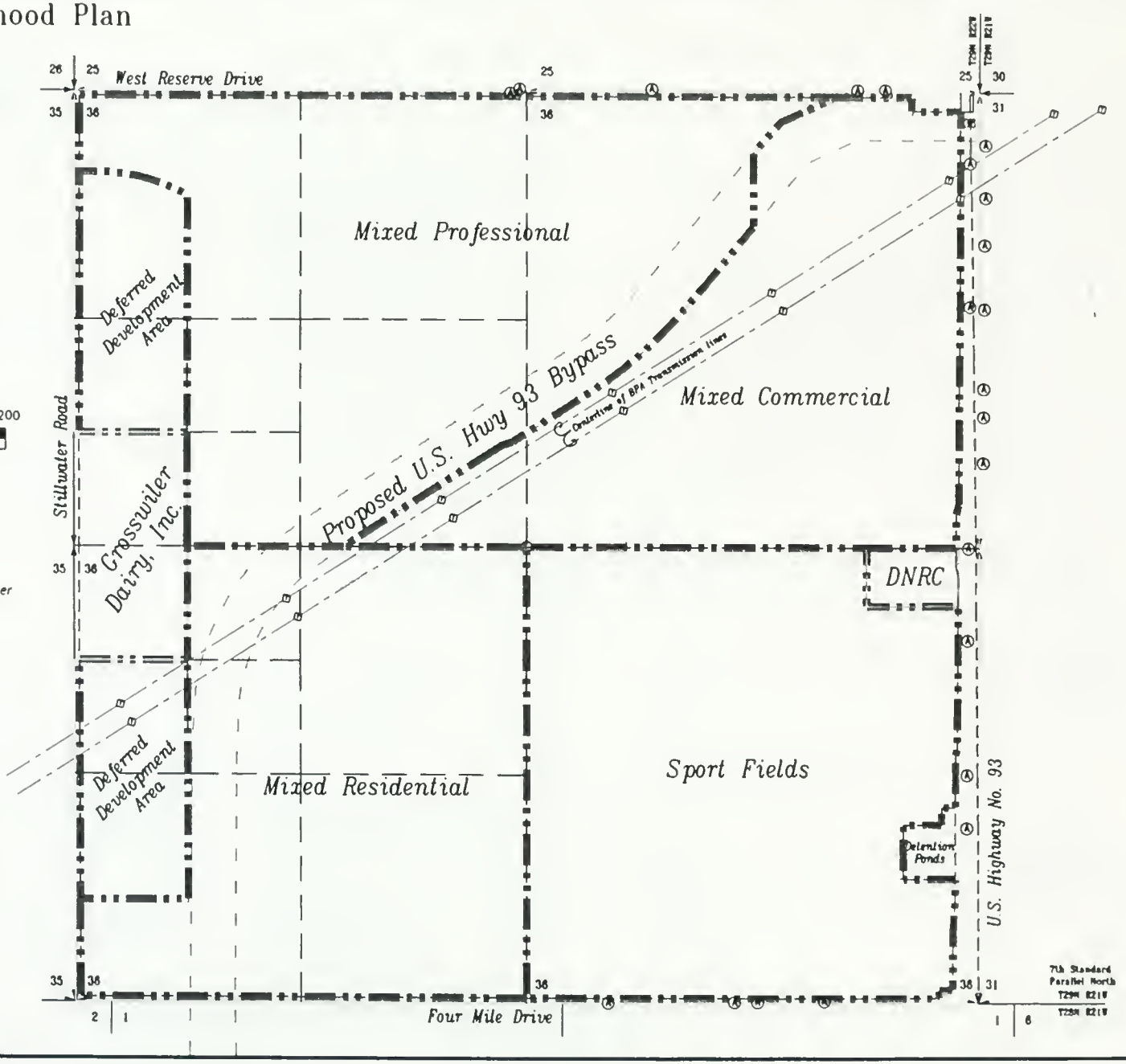
- Apply a B-5 Industrial-Commercial zoning designation to the Mixed Commercial POD of the 1999 Section 36 Neighborhood Plan;
- Apply a R-5 Residential/Professional Office zoning designation to the Mixed Professional Pod of the 1999 Section 36 Neighborhood Plan;
- Apply a RA-3 Residential Apartment/Office zoning designation to the Mixed Residential POD of the1999 Section 36 Neighborhood Plan; and
- Maintain the P-1 zoning designation for the SW ¼ of Section 36.

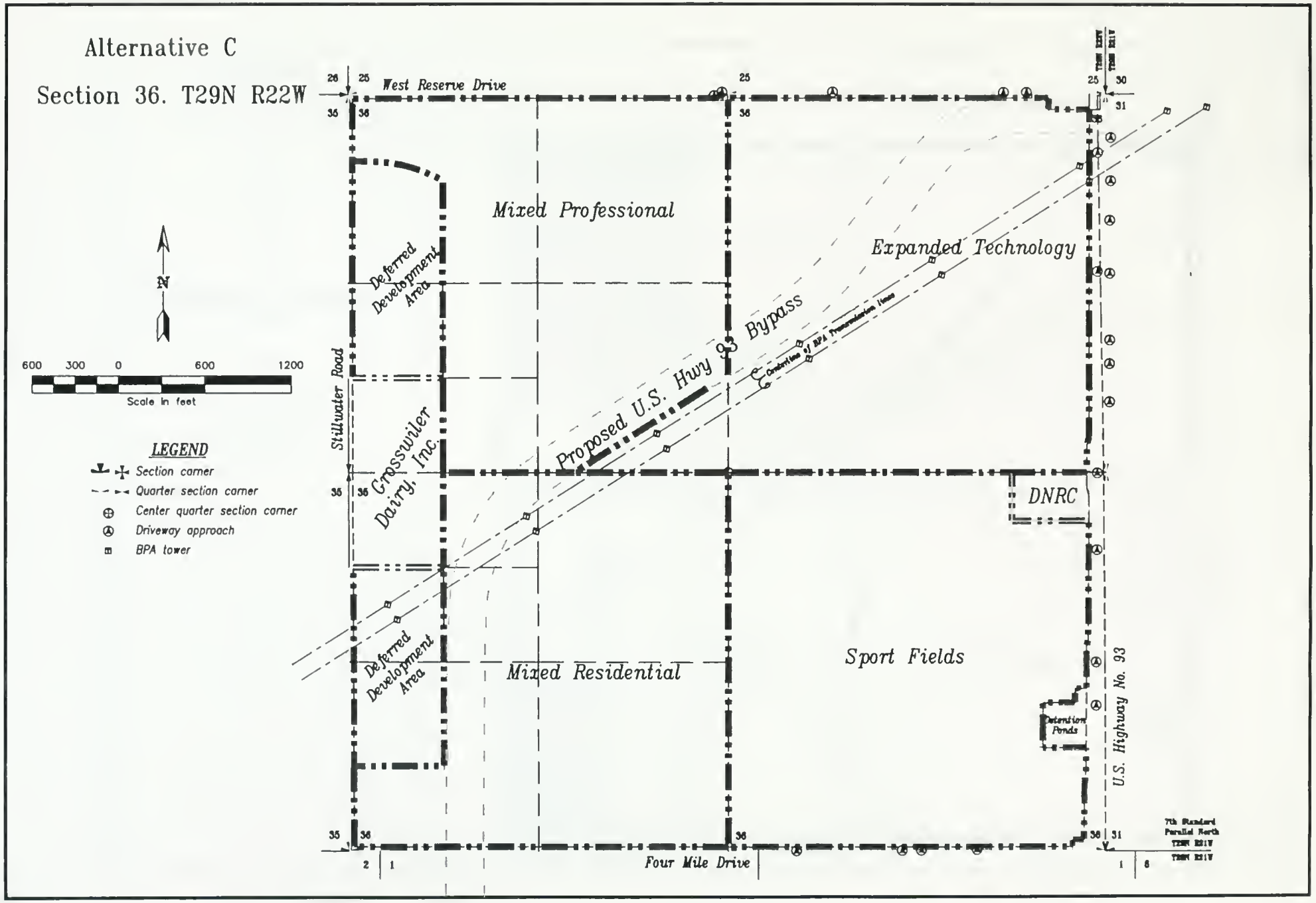

Alternative A
Section 36. T29N R22W
West Reserve Drive
Agriculture
Agriculture
Proposed U.S. Hwy 93 Bypass
Centerline of BPA Transmission lines
Stillwater Road
Crosswiler Dairy, Inc.
DNRC
Sport Fields
Agriculture
Detention Ponds
U.S. Highway No. 93
Four Mile Drive
N
600 300 0 600 1200
Scale in feet
LEGEND
Section corner
Quarter section corner
Center quarter section corner
Driveway approach
BPA tower

Section 36 Neighborhood Plan

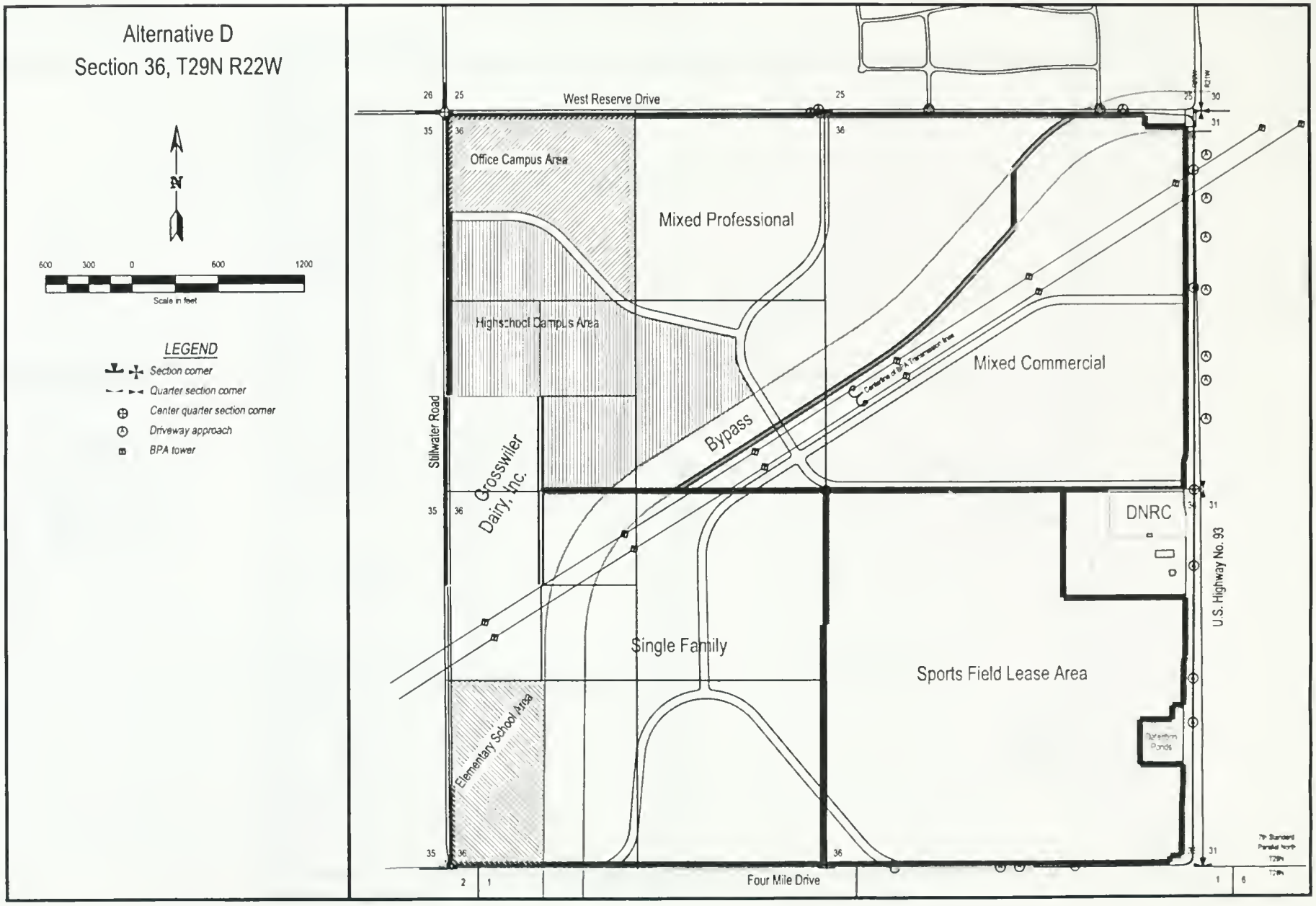
Alternative B

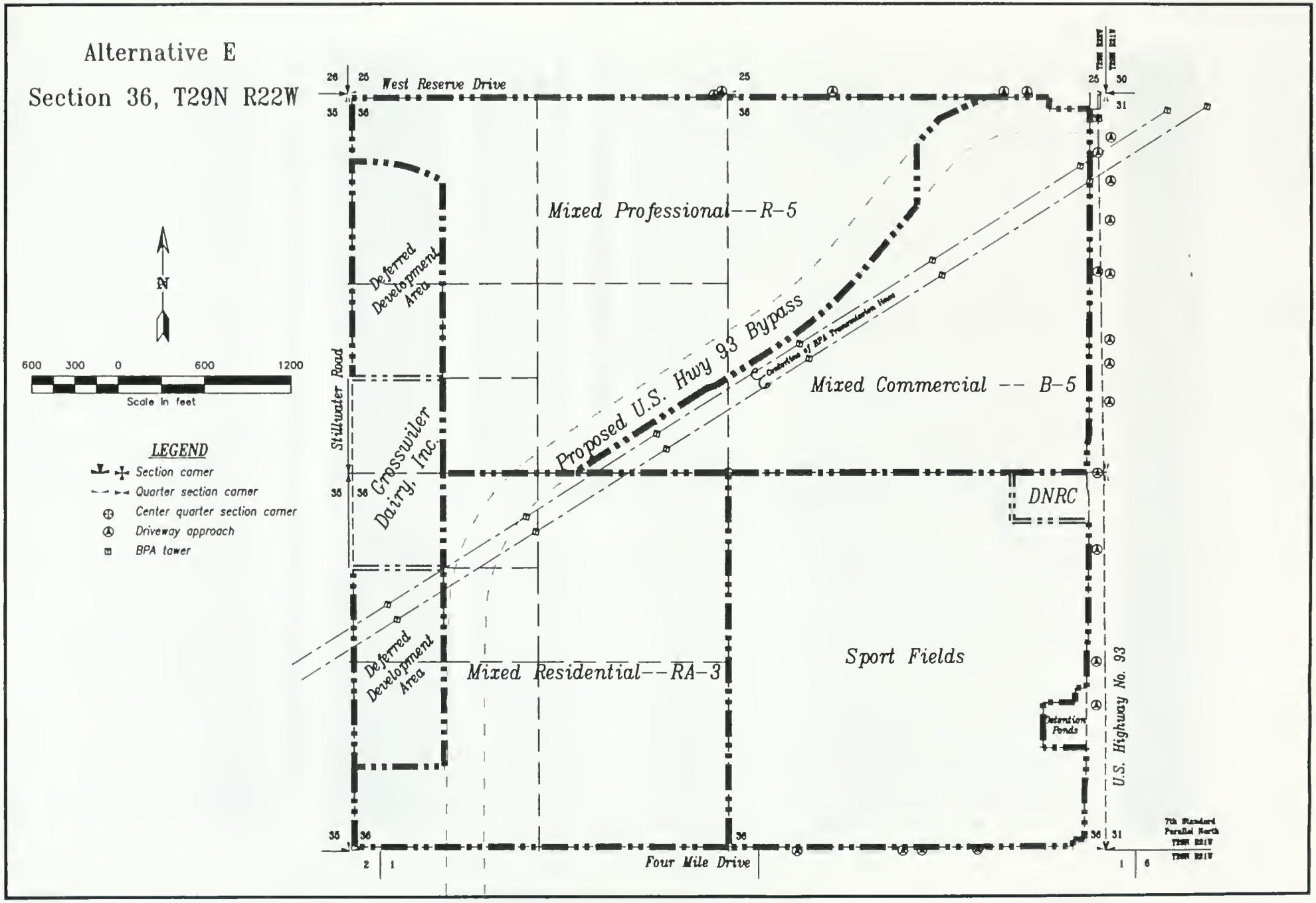





Alternative C
Section 36. T29N R22W
West Reserve Drive
Mixed Professional
Deferred Development Area
Expanded Technology
Proposed U.S. Hwy 93 Bypass
Centerline of BPA Transmission lines
Stillwater Road
Grosswiler Dairy, Inc.
DNRC
Deferred Development Area
Mixed Residential
Sport Fields
Detention Ponds
U.S. Highway No. 93
Four Mile Drive
7th Standard Parallel North
T29N R21W
T28N R21W
600 300 0 600 1200
Scale in feet
LEGEND
Section corner
Quarter section corner
Center quarter section corner
Driveway approach
BPA tower

Alternative D
Section 36, T29N R22W




Alternative E
Section 36, T29N R22W
West Reserve Drive
Mixed Professional--R-5
Deferred Development Area
Stillwater Road
Proposed U.S. Hwy 93 Bypass
Centerline of BPA Transmission Lines
Mixed Commercial -- B-5
Crosswiler Dairy, Inc.
DNRC
Deferred Development Area
Mixed Residential--RA-3
Sport Fields
Detention Ponds
U.S. Highway No. 93
Four Mile Drive
7th Standard Parallel North
600 300 0 600 1200
Scale in feet
N
LEGEND
Section corner
Quarter section corner
Center quarter section corner
Driveway approach
BPA tower

2.6 Description of Relevant Past, Present, and Reasonably Foreseeable Future Actions Not Part of the Proposed Action

2.6.1 Past Actions

Past actions on the property have included historical lease agreements for agricultural activities, which continue to this day for areas within the SW ¼, NW ¼, and NE ¼ of the Section. Easements have been granted to the Montana Department of Transportation (MDT) for widening projects involving U.S. Highway 93 and placement of a storm water retention pond. The placement of the BPA power lines through Section 36 was a past action and has relevance today with regards to the validity of an easement and payment for compensation. A lease has been issued to the City of Kalispell for approximately 134 acres in the SE ¼ for development of a sports field complex. This decision is not affected by the proposed action but is considered in the impact analysis for future uses. DNRC was also involved in an alignment proposal for the Highway 93 by-pass, which remains a "proposal" by MDT (see Final EIS referenced in Section 1.4.2.7) but subject to future approval by the Board of Land Commissioners. Other past actions, not part of this proposal, include the construction and operation of the Kalispell Unit and Northwestern Land Offices on approximately 15 acres in the SE ¼ of Section 36 and the past sale of 20 acres in the W½ W ½ to a private party.

2.6.2 Present Actions

Present actions by DNRC include the ongoing management of leases to the City of Kalispell for the Kalispell Youth Athletic Complex (sports fields) and with a farmer for agricultural use of lands within the SW, NW, and NE 1/4s of Section 36. DNRC is still enjoined by court order from further state actions on Section 36 pending resolution of the court case referenced in Section 1.2.

2.6.3 Reasonably Foreseeable Future Actions

All known future actions are being evaluated with this DEIS, including considerations for two proposed school sites and a 60 acre business and technology park. Future actions that will require additional consideration would be the purchase by MDT of an easement for the proposed Highway 93 by-pass alignment, perfection of an easement and compensation to the School Trust for the BPA power corridor through Section 36, and redesign of the BPA infrastructure to elevate the power lines.

2.7 Summary Comparison the Predicted Achievement of the Project Objectives and the Predicted Environmental Affects of all Alternatives

2.7.1 Summary Comparison of Predicted Achievement of Project Objectives

The project objectives will be satisfied by alternative actions B, C, D, and E. Alternative A will not achieve objectives related to (1) highest and best use, (2) analysis of specific proposals including a proposed business and technology park, (3) linkage relationships to local government decision-making processes, and (4) guidance to the future use of the property relative to project review.

2.7.2 Summary Comparison of Predicted Environmental Effects

The no-action alternative will have the least affect on the physical environment but achieves the least in terms of overall benefit to the school trust and local economy. The other action alternatives have positive effects to the local economy and to the school trust but have more direct and cumulative effects relative to traffic generation and local water and sewer services. The effects analyses identify causal relationships to help define appropriate mitigation strategies to address impacts related, in particular, to roads, water, and sewer. Mitigation needs will be linked to specific project proposals based upon the broader cumulative effects analysis accomplished by this EIS evaluation.

Alternative A is the no action alternative and proposes a status-quo plan for the future use of the property. No new use proposals would be accepted for the property that would propose uses other than agriculture.

Alternative B serves as the baseline for comparison of all alternatives. This alternative is the Section 36 Neighborhood Plan adopted in 1999 by the local city/county jurisdictions. The plan identifies 4 land use pods linked to specific goals and policies for appropriate use and phasing of development. Zoning regulations are proposed to implement the plan. The plan represents a reasonable approach to seek higher returns to the school trust while seeking to acknowledge the interests of the adjoining land owners and general community. This is accomplished by proposing substantial land use restrictions related to use and location.

Alternative C would modify the Section 36 Neighborhood Plan by expanding the area available for technology uses and reducing the area of the Mixed Professional POD. Another deviation from Alternative B would be further limitation of acceptable retail uses within the Mixed Commercial POD. This alternative would likely be positive in terms of new job creation, less possibility of job shifting, and less traffic as compared to Alternative B.

Alternative D would modify the Section 36 Neighborhood Plan by allowing certain large campus uses, such as schools and office complexes, to locate in the area of Stillwater Road during the initial phases of development and seek to promote single-family dwellings in the SW ¼ as opposed to high density residential. This alternative would likely be positive in terms of traffic and neighborhood compatibility but less positive relative to job creation.

Alternative E would modify the Section 36 Neighborhood Plan by applying traditional city zoning classifications to the 4 land use pods. Application of existing city zoning classifications would have a variety of benefits including consistency of zoning regulations throughout the jurisdiction. The trust would probably benefit through increased development opportunities, especially within the Mixed Commercial POD. This alternative would have negative effects related to new job creation, traffic, and aesthetics.

A summary comparison of each alternative relative to the major effects indices is shown in Table 2.5.

Table 2.5 Summary Alternatives Relative to the Major Effects Indices

	Use Allowances	Traffic	Water Demand	Sewer Demand	Employment	Taxes	Trust Benefits	Other Utilities	Aesthetics	Recreation	Aquifer	Air Quality
Alternative A	◂	◂	◂	◂	◂	◂	◂	◂	▸	◂	◂	○
Alternative B	○	○	○	○	○	○	○	○	○	○	○	○
Alternative C	◂	◂	○	○	▸	○	○	○	○	○	○	○
Alternative D	○	◂	◂	◂	◂	○	◂	○	▸	○	○	○
Alternative E	▸	▸	○	○	○	○	▸	○	◂	○	○	○

○= EQUAL TO THE BASELINE VALUES OF ALTERNATIVE B
▸= MORE THAN THE BASELINE VALUES OF ALTERNATIVE B
◂= LESS THAN THE BASELINE VALUES OF ALTERNATIVE B

2.8 Identification of the Preferred Alternative

Alternative D is the preferred alternative. This alternative would allow for early phase consideration of school sites for an elementary school and high school located near Stillwater Road. A high school site, requiring 40 – 80 acres, located north of the 20 acre private tract would be an appropriate location for a large campus use that requires immediate and adequate access to a public road system. An elementary school site would be appropriate to the SW ¼ where residential use is proposed. The high school has no immediate need to locate in close proximity to other developed properties. The elementary school would probably develop concurrent with residential development of the SW ¼. The phasing language of the Section 36 Neighborhood Plan would also be amended to permit a large office campus to be located near the intersection of Stillwater Road and West Reserve Drive. This location would be ideal to serve as a joint campus of resource agencies, which again would not require close

association with other developed properties. The other important element of this alternative is the desire to promote single-family dwellings in the SW ¼ as opposed to high density residential. This objective would seem to be consistent with public comments concerning compatibility with surrounding properties. To achieve this objective, the DNRC will offer the SW ¼, less the elementary school site, as an exchange property. Under private ownership, the SW ¼ will have a better opportunity to develop single-family dwellings where title to the land can be conveyed to individual lot owners. Under DNRC ownership, leasing lots for single-family dwellings is unlikely. All other provisions of the Section 36 Neighborhood Plan would remain unchanged.

Chapter 3 Affected Environment

3.1 Introduction

Section 36 is School Trust Land administered by DNRC to provide revenue for the "common schools" of Montana. It is located on the north side of Kalispell, Montana. It is bounded on all sides by public roads, including U.S. Highway 93 North on the east. West Reserve Drive borders the property on the north. Approximately 20 acres of the original section of land had been previously sold. Other portions of the property are encumbered by various easements associated with road or utility infrastructure. A description of the existing trust property and environment follows.

3.2 Description of Relevant Effected Resources – Human Environment

3.2.1 Land Use

3.2.1.1 Section 36

The existing land use within Section 36 consists of DNRC offices, a variety of infrastructure associated with the Grosswiler Dairy located on a private tract of land, a stormwater detention pond, and a city sports complex consisting of 10 baseball fields and seven soccer fields. Approximately 3/4 of the land is used for agricultural purposes.

The DNRC facility is located along the eastern edge of the property in the southeast quarter of the section and is accessed from Four Mile Drive. The DNRC offices accommodate about 35 employees. The dairy related property is located on 20 acres of private land in the western portion of the section. The dairy leases land from the State of Montana for crop production and grazing. The athletic fields are located in the southeast quarter of the section and are accessed from Four Mile Drive. The storm water detention pond is located between Four Mile Drive and the DNRC offices along the east edge of the property.

Section 36 is also a corridor for Bonneville Power Administration (BPA) transmission lines. The BPA transmission corridor has a general alignment that runs from southwest to northeast across the property. Two circuits cross the property via two tower structures. Each circuit is capable of carrying 230 KV of electricity. One circuit is generally described as "Hot Springs/Flathead" and the other "Libby/ConKelley". The tower structures have an average height of 70 feet with a span between towers of approximately 1225 feet. The average ground clearance of the conductor at the sag is 27.5 feet. A height separation distance [between the ground and conductor] of more than 40-50 feet is desirable. The National Electric Safety Code (NESC) establishes clearance requirements for uses in proximity to the conductors. BPA determines proximity allowances of uses. DNRC has no record of a perfected easement by BPA for the transmission infrastructure located on Section 36 and the power lines are considered to be in trespass.

The Montana Department of Transportation has tentatively located the alignment of the west side bypass of U.S. Highway 93 across the property. The proposed alignment begins at the U.S. 93/West Reserve Drive intersection and cuts diagonally across the property towards the southwest. This future road alignment generally parallels the BPA transmission lines through the northeast quadrant of the Section and then shifts to a southern alignment passing under the BPA transmission lines and exiting the Section along the southern boundary. Section 1.4.2.7 provides additional information on this subject.

3.2.1.2 Adjacent Land Uses

The general character of the surrounding lands is a mixture of land uses. To the immediate north, residential uses predominate. Residential uses on the north side of West Reserve Drive include Mountain Villa Apartments, condominiums, and single family dwellings and lots associated with Country Estates and Stillwater View Estates. Agricultural land dominates to the west of Section 36. To the south of the property adjacent to the SE ¼ of Section 36, are 2 residential subdivisions, a large Worship Center, and a retail nursery. Rural residential and/or agricultural uses are more predominant further west along Four Mile Drive. To the east of the property is Flathead Valley Community College. The college has 1,200 students and operates year-round. Just to the north of the Flathead Valley Community College is the NUPAC gravel quarry, which is the site of the proposed Crosswell Mountain View Plaza shopping center.

Several small retail businesses are located on the southeast corner of the U. S. 93/West Reserve Street intersection. These businesses include a gas station/convenience store (Ole's Gas and Sub Stop), a hair salon (New Beginnings Hair Design), a scuba dive shop (Big Horn Aquatics), and a drive-through Espresso shop. A significant employer in the vicinity is Semi Tool, which employs approximately 700+ people.

3.2.1.3 Future Anticipated Uses

There are several committed developments occurring in the area. For the purpose of this analysis it is assumed that these developments will all be constructed within the next four years.

Expansion of the athletic fields in the southeast quadrant is anticipated. Currently there are 10 softball/baseball fields and seven soccer fields. According to Mike Baker of the City of Kalispell Parks & Recreation Department, an additional seven baseball fields and seven soccer fields will be built within the next four years. For the purposes of this analysis, it is anticipated that four football fields will also be constructed during the next four years.

The Stillwater View Estates is a residential subdivision under construction north of West Reserve Drive and west of Country Estates. This development will comprise 123 single-family dwelling units. The first 50 of these units will be constructed in the summer of 2001 and the rest of the units anticipated to be completed within the next four years.

The Crosswell Mountain View Plaza shopping center development will be located to the east of Section 36 on property currently used as the NUPAC gravel pit. For the purposes of infrastructure analyses, it is assumed that this commercial development will be completed within the next four years. This development will consist of a 515,000 square foot retail shopping center. The development will include 3 large superstores and 5 smaller retail shops. The NUPAC development will include the installation of an additional traffic signal on U.S. Highway 93. A portion of the existing gravel quarry will likely remain in operation for the foreseeable future.

As part of the NUPAC development, the Montana Department of Highway's maintenance storage site, located just north of the NUPAC office, will be relocated to a new site several miles to the north on U.S. Highway 93.

Another development that will occur within the next four years is the Waterford retirement community. It will be constructed just south of Four-Mile Drive to the west of the ball fields. This development will include 200 units of various elderly housing types. The development will include apartments, condominiums, assisted living units, and a dementia ward.

Another anticipated development is the Christian Center Assembly of God Church, which is planning to add 20,000 square feet of additional space. The building addition will be accessed from North Haven Drive and Summit Drive.

There are two other potential developments within the area that are in the conceptual stage at this time and may eventually impact the site. Because there is no firm commitment for these two possible developments at this time, they have not been included in any future year analyses for traffic. They are only mentioned herein to document these possible future developments. One is a possible expansion of the Flathead Valley Community College and the other is the possible construction of a large 120-acre shopping center mall on the eastern end of West Reserve Drive in the Evergreen area.

The construction of a western bypass around Kalispell is not anticipated to occur within the 20 year planning horizon of this analysis. MDT has indicated that they have no plans to construct the bypass within the foreseeable future. However, for the purpose of this evaluation, it is expected that the by-pass will be built after year 20.

3.2.1.4 Planning and Zoning

Section 36 is within the city-county planning jurisdiction of Kalispell. The Kalispell City-County Master Plan has application to the City of Kalispell and for an area approximately 4.5 miles outside the city limits. The most recent update to the plan is 1986. A city-county planning board acts as an advisory board on most matters related to issues of planning, zoning, and subdivisions. Recommendations from the city-county board follow a path to the city council if the relevant action pertains to property within the city limits and to the county commissioners for all matters outside the city limits.

The Flathead Regional Development Office (FRDO) initiated a process to update the Master Plan in December 1996. That update has not been completed but remains pending before the two governing bodies. However, during the update process, a neighborhood plan for Section 36 was approved in 1999 as an official amendment to the Kalispell City County Master Plan. A court injunction is preventing implementation of the neighborhood plan at this time. A total of 5 neighborhood plans have application within the city-county planning jurisdiction. The proposed growth policy for the planning jurisdiction anticipates a mix of rural and urban uses to the north, east, and south of Section 36. Agriculture is still anticipated for the area west of Section 36.

Two zoning designations currently apply to Section 36. The SE1/4 was annexed into the city limits in 1997 and zoned P-1 (Public). The remainder of the property has been zoned AG 80 (agriculture) since 1987. A Memorandum of Understanding between the city, county, and DNRC establishes the framework for zoning and subdivision review by local jurisdictions. The neighborhood plan is the basis to establish land use policy for the property and to assign relevant zoning classifications. Zoning outside Section 36 includes various agriculture, residential, and commercial districts. The location and description of these districts is available from FRDO.

3.2.1.5 Reclassification of State School Trust Lands

The Department of Natural Resources and Conservation (DNRC), under the direction of the Board of Land Commissioners, is responsible for the multiple-use management concept of State School Trust Lands. Trust lands are classified to reflect the principal resource associated with each parcel. Periodic adjustments to the classifications are made to recognize that some land should be reclassified for a higher and better use.

State lands are managed under a "Lease" for the primary purpose according to its classification. DNRC also utilizes the resources in a harmonious and coordinated manner with each other. When a parcel of state land in one class has other multiple uses or resource values that are of such significance that they do not warrant classification for the value, the land is managed to maintain or enhance the multiple-use values. These secondary uses are authorized under a Land Use License.

All State School Trust Lands are classified as follow:

- Class 1 Lands which are principally valuable for grazing purposes;
- Class 2 Lands which are principally valuable for the timber that is on them or for the growing of timber or for watershed protection;
- Class 3 Lands which are principally valuable for the production of crops;
- Class 4 Lands which are principally valuable for uses other than grazing, crop production, timber production, or watershed production.

The classification or reclassification of state lands reflects the capability and principle value of the land.

Reclassification of state lands requires an inventory of the soils capability, vegetation, wildlife use, mineral characteristics, public use, aesthetic values, and planning information related to the classification and reclassification. DNRC conducts this inventory. Reclassification may occur at the time a lease would be issued.

The SE ¼ of Section 36 is classified as Class 4 Lands. The remaining area of the Section is presently classified as Class 3 Lands.

3.2.2 Transportation

Section 36 is bounded by U.S. Highway 93 to the east, which is a five lane principal arterial connecting Kalispell with the community of Whitefish. West Reserve Drive is a two-lane State road (State Route 548) that runs along the north edge of the site. Stillwater Road is a two-lane paved road that runs along the west edge of the property. The southern edge of the property is bounded by Four-Mile Drive. The portion of Four-Mile Drive which intersects Highway 93 is paved and currently provides access to the athletic fields within Section 36 and residential areas to the south. [Opposite Four Mile Drive on the east side of Highway 93 is Grand View Drive.] To the west of the ball fields, Four-Mile Drive changes to gravel and proceeds to the top of a hill where the road merges into a dirt surface before intersecting with Stillwater Road. Several residences are accessed via the unimproved portion of Four-Mile Drive.

There are two significant intersections adjacent to the property. These two intersections are the U.S. 93/West Reserve intersection and the U.S. 93/Grand View Drive intersection.

The U.S. Highway 93/West Reserve Drive intersection is controlled by a fully actuated traffic signal. The south approach on 93 consists of two through lanes with separate left and right turn lanes. The

north approach on 93 has a single through lane, a through/right turn lane and a left turn lane. The west approach on West Reserve Drive consists of a through/left and a right-turn lane, while the east approach has a through/right lane and a separate left-turn lane. The intersection is equipped with street lighting, advance intersection warning signs and lane-use signs.

The U.S. Highway 93/Grand View Drive intersection is also signalized. U.S. Highway 93 at this intersection consists of two through traffic lanes and designated right and left turn lanes. Grand View Drive consists of a single left/through/right lane on the east approach. The west approach on Four-Mile Drive consists of a left/through lane and a right-turn only lane. The signal is semi-actuated with loop detectors located on the minor side-road approaches. The intersection is also equipped with street lighting.

The U.S Highway 93 corridor consists of four travel lanes with a center double left-turn lane and 10 foot wide paved shoulders. U.S. Highway 93 has a 45-mph speed limit at the Grand View intersection and a 55-mph speed limit at the West Reserve intersection. The speed limit on U.S. Highway 93 increases to 65 mph just north of the West Reserve Drive intersection. The corridor is equipped with concrete curb and gutter on both sides of the road in the vicinity of the proposed development. There is a 12-foot wide asphalt bicycle path located adjacent to the eastern side of the road. This bike path extends from the south along Highway 93 and terminates at the West Reserve intersection. According to MDT traffic count data for 1999, U.S. Highway 93 had an average daily traffic (ADT) volume of 18,510 vehicles per day (vpd) south of Grandview Drive and 10,300 vpd north of the West Reserve intersection.

West Reserve Drive, west of U.S. 93, consists of two 12-foot wide travel lanes with no paved shoulder area. The road has a rural cross section with open drainage ditches on both sides of the road and no curb, gutter, or sidewalks. West Reserve Drive, east of U.S. Highway 93 consists of two 12-foot travel lanes with 10-foot wide paved shoulders. The road has curb and gutter on both sides and a four-foot wide concrete sidewalk immediately behind the curb on the south side of the road. MDT traffic count data for 1998 indicates that West Reserve Drive had an ADT of 4,100 vpd west of 93 and 11,550 vpd east of the 93 corridor. Counts collected by Robert Peccia & Associates (RPA) in March of 2001 indicated that West Reserve Drive has an ADT of 1,800 west of Stillwater Road.

The intersection of West Reserve Drive and Stillwater Road is a rural intersection located within an open expanse of agriculture land. The intersection is controlled by STOP signs located on the north and south approaches on Stillwater Road. Both roads are paved and approximately 24 feet wide. Neither road has any defined shoulder area. Traffic counts collected by RPA in March of 2001 indicated that Stillwater Road has an average daily traffic volume of 530 vpd south of West Reserve Drive and 360 vpd north of West Reserve Drive.

Stillwater Road begins at an intersection with Three Mile Drive and proceeds north through the valley. The road is paved. The LHC Construction office and gravel pit it located to the north of West Reserve Drive on Stillwater Road. Truck traffic from LHC comprises much of the traffic on the road between the gravel pit and West Reserve Drive. Trucks appear to be using Stillwater road as a way to bypass U.S. Highway 93 and reach the western end of Kalispell. Most of the traffic on Stillwater road appeared to be cut-through traffic as there are few residences or other destinations south of West Reserve.

Four-Mile Drive connects to Stillwater road half way between Three Mile Drive and West Reserve Drive. Four-Mile Drive is gravel and has very little traffic. The ADT on Four-Mile Drive was estimated to be between 20 and 30 vehicles per day.

There are currently ten ball fields and seven soccer fields located in the SE ¼ of Section 36. The fields are in use from April to October. The ball fields are used on weeknights starting at 5:30 for ball games. Seven of the ten fields are typically used each evening. Tournaments occur only twice a year and are held on Saturdays with only one-two fields in use at any one time.

Two or three soccer fields are used in the spring for select soccer practices between 3:30 and 5:30 on weekdays. Two all day tournaments are held on Saturdays in the spring using all of the fields. In the fall, five to six fields are used nightly for practices with games on Saturdays. The use of the fields are scheduled to spread out the activity throughout the year.

3.2.3 Water System

The DNRC office complex is currently being served by an individual well. An irrigation well is located in the NW ¼ of Section 36, which is used by the current agricultural lessee to irrigate crops. A third well on Trust Land within Section 36 is located in the SE ¼ and is used for irrigation of the ball field complex.

The City of Kalispell's potable water system is divided into two separate and distinct pressure zones. The lower pressure zone is supplied by three wells (Armory, Depot, and Buffalo Hills), the Noffsinger Spring (Lawrence Park), and two partially buried ground-level storage tanks. The upper zone is supplied by two wells (Grandview 1 and 2) and an elevated storage tank. Water is transferred from the lower zone to the upper zone via two booster pumping stations. Booster Pumping Station No. 1 is only used as a back-up. There is an irrigation well in the SE ¼ of Section 36. This well is not currently connected to the potable water system.

Development proposed for Section 36, if served by the Kalispell water system, would be located in the upper zone.

3.2.3.1 Water Production and Storage System

A tabulation of water production data is found in Table 3.1

Table 3.1 Water Source Data

Water Source	Capacity (gpm)	No. of Pumps	Horsepower	Static Water Level (FT)	Auxilary Power	Well Depth (FT)	Casing Depth (FT)	Casing Diameter (IN)
Armory	1700	1	150	19	No	390	382	16
Depot	1250	1	100	48	No	298	278	12
Buffalo Hills	2000	1	200	159	Yes	540	275	16
Grandview 1	1100	1	125		Yes	459	398	12
Grandview 2	800	1	100		No	486	393	12
Noffsinger Spring	4200[2]	3	150/75/100	NA[1]	No	NA	NA	NA
Section 36 (DNRC)	2000	1	125	105	No	463	463	10

[1]Not applicable to this facility

[2]Noffsinger Spring is limited to a maximum output capacity of 2,100 gpm by permit

The Grandview No. 2 well is not used due to iron bacteria and unacceptable levels of sand. Deficiencies in the Grandview No. 2 source have made it difficult for the system to produce enough water to meet current peak summer demand. Chlorination is available at each well

and at Noffsinger Spring. Emergency generators are available for standby power at the Buffalo Hills well, and the Grandview #1well.

Table 3.2 tabulates storage capacity for the Kalispell system.

Table 3.2 – Water Storage Data

Reservoir	Volume (GAL)	Depth (FT)	High Water Elevation	Footprint	Pressure Zone	Vintage (Year)	Construction
Reservoir 1	1,700,000	22	3077.14	150 FT diameter	Lower	1914	Buried Concrete With Wood Roof
Reservoir 2	2,700,000	22	3077.14	150X75 FT[1]	Lower	1952	Buried Concrete With Wood Roof
Elevated Reservoir	100,000	25.4	3212.20	30 FT Diameter	Upper	1957	Elevated Steel

1Tank is 150 feet by 75 feet with each end on half of a 150 foot diameter circle

All storage reservoirs were inspected in July of 1998 and were found to be in good condition with only minor maintenance recommended[12].

Two booster pumping stations are available for transferring water from the lower zone reservoirs to the upper zone reservoir. Booster Pumping Station No. 1 was constructed in the mid 1970's and is used only as a backup to Booster Pumping Station No. 2. Chlorination is available at Booster Pumping Station No. 2. An emergency generator is available for standby power at Booster Pumping Station No. 2. However, it is only sized to run one of the larger pumps.

Table 3.3 Tabulates water booster pumping station data.

Table 3.3 Water Booster Station Data

Pump Station	No. of Pumps	Capacity (gpm)	Head (FT)	Horsepower	Standby Power	Floor Elev.
Booster No. 1	1	700	160	50	No	
Booster No. 2	3	1100	160	100	Yes	3067.90
		1200	160	100		
		900	160	50		

3.2.4 Sewer Collection System

A septic system is used to treat sewage from the DNRC offices. Porta Potties are used in the SE ¼ of Section 36 during sporting events. Indoor plumbing of rest rooms is anticipated in the near future for the ball field complex.

12Inspection Report for City of Kalispell, 100K Elevated Tank, 2.7 Million Gallon Concrete Reservoir, 1.7 Million Gallon Reservoir, Extech, LLC, July 1998

The sewer collection system serving the City of Kalispell consists of a network of reinforced concrete (RCP), vitrified clay (VCP), cast iron (CI), asbestos cement (AC), and PVC piping ranging in diameter from 6-inch to 36-inch. Sixteen sewage lift stations are located around the perimeter of the City. The original collection system was installed in 1942. Additions and improvements have taken place as property has developed and growth has required extension of service. The City also accepts sewage at the WWT^{3}P from the Evergreen Sewer District via a long forcemain.

3.2.4.1 Gravity Collection System

The gravity sewer collection system serving the City of Kalispell is generally in good condition. Most direct connections from the storm sewer system have been eliminated, however a significant number of roof drains in the downtown area are still connected to the sewer system. Rainfall and snowmelt entering the sanitary sewer system result in increased flows to the Wastewater Treatment Plant. Manholes downstream of the Evergreen forcemain and Lift Station No. 9 forcemain are experiencing considerable corrosion. The main trunk sewer line tributary to the wastewater treatment plant was increased in size to a 36-inch pipe in 1972 increasing the overall capacity of the collection system. Main trunk sewers serving major collection areas are listed in Table 3.4.

Table 3.4 – Main Trunk Sewers

Trunk Sewer	Area Served
Begg Park Drive	South Meadows and Ashley Park
City Shop to Meridian Road	North of Ninth Street, West of Sixth Ave. West, South of West Center Street, West of Meridian Road, Buffalo Commons, Northridge, Highland Park, Grandview Heights, and Hutton Addition
5th Ave West to East Center Street	North of BNSF Railroad, including Buffalo Hills, Fairview Blvd Townhouses, River View Greens, Buffalo Stage, and Village Greens
WWTP to City Shop	Green Acres, Kalispell Airport, Highway 93 Corridor South of 14th Street East
City Shop to 11th St. East and Second St. East	North of 12 Street East, South of East Center Street, East of Main Street, and Woodland Park

3.2.4.2 Sewage Lift Stations

The City of Kalispell presently operates and maintains 16 raw sewage lift stations. Table 3.5 provides general information on each station.

Table 3.5 – Raw Sewage Lift Stations

Lift Station No.	Location	Pump Station Arrangement	No. of Pumps	Motor HP (EA)	Wetwell Operating Volume (gal)	Average Pumping Rate (gpm)	Average Inflow Rate (gpm)
2	18th Street East Between Hwy 93 and Airport Road	Wetwell/Drywell Packaged System	2	10	2350	490	
3	SE Corner of Hwy 93 and Grandview Dr. Intersection	Wetwell/Drywell Packaged System	2	20	1300	250	285

Lift Station No.	Location	Pump Station Arrangement	No. of Pumps	Motor HP (EA)	Wetwell Operating Volume (gal)	Average Pumping Rate (gpm)	Average Inflow Rate (gpm)
	Grandview Dr. Intersection	Packaged System					
4	South of Liberty Street in El Dorita Addition 3	Below Grade Vertical Column Pumps	2	3	405	165	6
5	Intersection of Kelly Road and Eagle Drive	Above Grade Self Priming Packaged System	2	10	970	355	
5A	At the end of Eagle Drive	Submersible Packaged System	2				
6	Cooper Lane – Two Mile Vista Apts.	Submersible Packaged System	2	5	582	260	5
7	Woodland Park	Above Grade Self Priming Packaged System	2	10	1504	180	10
8	Sunnyside Drive and 7th Ave. West	Above Grade Self Priming Packaged System	2	5	550	85	10
9	West of Fairway Blvd.	Wetwell/Drywell	2	10	6420	140	16
10	West Nicklaus Ave. in Glacier Village Greens West	Wetwell/Drywell Packaged System	2	30	971	360	6
11	East Nicklaus Ave. in Glacier Village Greens East	Above Grade Self Priming Packaged System	2	5	335	170	
12	Buffalo Stage South of Bruyer Way	Above Grade Self Priming Packaged System	2	5	275	165	
13	Juniper Bend	Above Grade Self Priming Packaged System	2	10	428	105	2
14	Parkway Drive and Summit Ridge Drive	Submersible Packaged System	2	¾	280	25	2
15	Belmar North of Bluestone	Submersible Packaged System	2		300	210	
16		Above Grade Self Priming Packaged System	2	5	752	185	

3.2.5 Population and Economy

There is no resident population on the school trust lands in Section 36. The DNRC offices in the SE ¼ are the only permanent "business" structures on the property. The ball field complex in the SE !/4 attracts recreational use in the spring, summer, and fall months..

3.2.5.1 Population

The population of Flathead County rose from 59,218 in 1990 to 74,471 in 2000, an increase of 25.8 percent. This population growth was well above the statewide average of 12.9 percent, and Flathead County ranked among the fastest growing counties in the state.

The number of persons in Flathead County grew faster in the first half of the 1990s than in the latter portion of the decade. Flathead County's population increased 3.2 percent per year between 1990 and 1995, and then decelerated to a 1.4 percent per year growth from 1995 to 2000.

Net in-migration occurred into Flathead County throughout the decade, but it slowed toward the end of the 1990s. Net in-migration totaled roughly 8,700 persons (or about 1,740 per year) from 1990 to 1995, and approximately 3,200 (or about 640 per year), between 1995 and 2000. A summary of this information is presented in Table 3.6.

Table 3.6 Population and Net Migration

	Persons			Annual Growth		Net Migration	
	1990	1995	2000	1990-95	1995-00	1990-95	1995-00
Montana	799,065	868,500	902,195	1.7%	0.8%	46,700	11,000
Flathead County	59,218	69,487	74,471	3.2%	1.4%	8,700	3,200

Source: U.S. Bureau of the Census.

3.2.5.2 Total Personal Income

Total personal income includes income from participating in the labor force, from property (such as stocks and rental housing units, but excluding capital gains), and transfer payments (primarily Social Security and Medicare payments, but also including welfare and income maintenance programs). The definition of personal income requires that the personal contributions toward social insurance (primarily Social Security) be subtracted. The data for personal income and its components have been converted to constant 1999 dollars to eliminate inflation. Total personal income growth is an important indicator of local economic performance because it is a major determinant of demand for local retail trade and service firms.

Total personal income in Flathead County increased 39.5 percent between 1990 and 1998, well above the statewide average of 23.4 percent. The fastest growing personal income component in Flathead County was labor income, which rose 42.8 percent from 1990 to 1998. This indicates that participation in the labor force, people working at jobs, was the major contributor to the growth in Flathead County's income.

The pattern of income growth in Flathead County was different than for Montana. Statewide, the three major components of personal income grew at about the same rate, with transfer payment growth ranking first by a small margin. In Flathead County, labor income was the fastest growing, by a large margin, and transfer payments ranked third. This reinforces the conclusion that most of the growth in Flathead County was associated with increased employment, rather than non-labor income sources.

This data also suggests that Flathead County economy is not disproportionately dependent on retirees, or non-labor income sources. Retirement income is not explicitly identified in personal income. But the major component of transfer payments is federal payments associated with Social Security and Medicare. Transfer payments account for approximately 16.4 percent of 1998 Montana personal income, as compared to only 15.0 percent in Flathead County. In addition, the approximately $153 million (1999 dollars) in Social Security and Medicare payments received in Flathead County is less than twice the individual payments for Federal Social Insurance (firms must contribute an amount equal to individual's contribution), indicating no net inflow of federal retirement dollars into the economy.

Dividends, interest and rent could include some retirement income to the extent that it is derived from rental property or other equities (such as stocks) held for retirement purposes. But, this category also includes the interest from savings account, rents from local business property, and many other items not held for retirement purposes. In any case, as with transfer payments, this income category for Flathead County is not dramatically different from the statewide average. Dividends interest and rent accounted for 23.6 percent of Montana's personal income as compared to 24.8 percent in Flathead County. A summary of this information is presented in Table 3.7.

Table 3.7 Total Personal Income Components

Total Personal Income and Components
Montana and Flathead County
1990 and 1998
(In millions of 1999 dollars

	1990	1998	Percent change
Montana			
Total Personal Income	$15,386	$18,994	23.4%
Div., Int,. and Rents	3,696	4,492	21.5
Transfer Payments	2,476	3,116	25.8
Ind. Payments for Fed Social Insurance	619	-827	-33.6
Labor Income	9,823	12,213	24.2
Flathead County			
Total Personal Income	$1,170	$1,633	39.5%
Div., Int,. and Rents	296	405	36.8
Transfer Payments	184	245	33.2
Ind. Payments for Fed Social Insurance	-52	-80	-53.8
Labor Income	744	1,063	42.8

Source: U.S. Bureau of Economic Analysis.

3.2.5.3 Per Capita Income.

Per capita income is personal income divided by population. Per capita income is a measure of economic well-being because it a major factor determining the amount of goods and services purchased by the "typical" person. The higher per capita income, the more goods and services can be purchased. Per capita income does not include the non-monetary benefits that many persons believe accrue to persons living in Flathead County.

Flathead County per capita income was about $22,700 (1999 dollars) during 1998, approximately five percent above the statewide figure of $21,600 (1999 dollars). Per capita income in Flathead County has been consistently about two to five percent above the

statewide average during the 1990s. As with most areas in Montana, average incomes in Flathead County are well below the U.S. figure.

Per capita income in Flathead County grew an average of 0.8 percent per year between 1990 and 1998, slightly less than the statewide increase of 0.9 percent per year. From 1995 to 1998, income growth accelerated for 3.5 percent per year, greater that the 2.4 percent per year increase in Montana. (See Table 3.8)

Table 3.8 Per Capita Personal Income

Per Capita Personal Income
Montana and Flathead County
1990,1995, and 1998
(Constant 1999 Dollars)

	1990	1995	1998
Montana	$19,200	$20,100	$21,600
Percent of U.S.	*79.3*	*79.6*	*78.0*
Flathead County	19,700	20,500	22,700
Percent of MT	*102.3*	*101.9*	*105.1*

Source: U.S. Bureau of Economic Analysis.

3.2.5.4 Retail Trade and Service Sales/Receipts

Retail trade and service establishments account for much of the office and commercial buildings and space in Flathead County. Montana's lack of a sales tax means that data concerning sales and revenues, which are readily published at the national level and for many other states, are not available here. The only sales and revenue information are provided in the Economic Census conducted every five years by the U.S. Bureau of the Census. The most current information is for 1997 and is reported using the new North American Industry Classification System (NAICS) codes, which means that 1997 cannot be compared to earlier figures. Nevertheless, the sales and revenue data reported in the 1997 Economic Census provides the only opportunity to analyze the sales and receipts of the retail trade and service sectors.

The 475 retail trade establishments in Flathead County had total sales of about $696 million in 1997. The three largest categories of retail trade sales were motor vehicles and parts (primarily car dealers) with sales of $173 million, general merchandise stores (including department stores and mass merchandisers such as Wal-Mart) with sales of $136 million, and food and beverage stories (including supermarkets) with sales of $119 million.

There were 187 professional, scientific and technical service establishments in Flathead County with total receipts of about $45 million. Legal and accounting services represented slightly more than one-half of the total receipts. A wide variety of other firms, ranging from architects to advertising companies, accounted for the remaining 45 percent of the receipts in this category.

The total sales of 319 accommodations and food services firms were about $132 million. The accommodations firms (including motels and other lodging places) accounted for about $47 million in sales, while the food services firms (including both eating and drinking places) had about $85 million in sales.

The last two columns of Table 3.9 provide sales per dollar income in the each of the trade and service categories. If the sales/receipts per dollar of income for Flathead County significantly

exceeds the statewide average, it is usually interpreted as indicating sales to non-residents. For example, the general merchandise category (NAICS 452) shows Flathead County sales of 9.3 cents per dollar of income, well above the statewide figure of 6.5 cents per dollar of income. This is taken to mean that many nonresidents (perhaps from Lincoln and Lake counties) come to Flathead County to shop.

In retail trade, general merchandise is the only category showing evidence of significant numbers of non-local shoppers. The Flathead County figure for gasoline stations is roughly equal to the statewide average, and this is somewhat surprising. The large nonresident travel industry in the county apparently did not lead to above average gasoline sales.

The total receipts per dollar of income for professional, scientific, and technical firms were much higher than their statewide counterpart. The figures for accounting and legal services were close to the state averages, suggesting the differences are in the advertising, architectural other categories.

The sales per dollar of income for accommodations and food services firm were well above the Montana figure. This indicates the large nonresident travel industry in Flathead County.

Table 3.9 Sales/Receipts for Retail Trade and Services

Sales/Receipts for Retail Trade and Services Flathead County and Montana, 1997					
		Flathead County		Sales/Receipts per Dollar Personal Income	
NAICS Code	Industry	Establishments	Sales/Receipts (Thousands)	Flathead County	Montana
	Retail Trade	475	$696,383	0.474	0.440
441	Motor Veh.& Parts	62	173,014	0.118	0.119
442	Furniture	32	16,522	0.011	0.011
443	Electronics & Appl.	19	13,960	0.009	0.010
444	Bldg. Materials and Supplies	55	85,424	0.058	0.053
445	Food and Beverages	37	119,929	0.082	0.075
446	Health & Pers. Care	27	14,644	0.010	.012
447	Gasoline Stations	42	59,958	0.041	.043
448	Clothing & Acc.	47	16,903	0.012	.014
449	Sporting Goods & Hobby, Books	43	23,618	0.016	.015
452	G'nl Mchdse	11	136,295	0.093	0.065
453	Misc. Retail	81	24,570	0.017	014
454	Non-store Retail	19	11,526	0.008	010
	Professional, Scientific, and Tech Services	187	44,762	0.030	017
5411	Legal Services	59	18,492	0.013	0.013
5412	Accounting Serv.	51	7,427	0.005	0.005
	Other Pro. Services	77	18,843	0.013	0.006
	Accommodations & Food Services	319	132,137	0.090	0.050
	Accommodations	78	47,387	0.032	0.016
	Food Services	241	84,750	0.058	0.034

Source: U.S. Bureau of the Census.

3.2.5.5 Employment by Retail Trade & Service Industry

The recent trends in retail trade and service industries are analyzed using employment data because the appropriate information for sales and receipts is not available. The fast and slow growing sectors during the last decade may be indentified using the employment by industry data published by the Montana Department of Labor and Industry.

The major population serving industries in Flathead County all grew rapidly in the 1990s. Employment in retail trade rose 44.5 percent between 1990 and 1999, while the corresponding figures for the services and finance insurance and real estate were 53.2 percent and 45.3 percent, respectively.

The service sector was the largest of the three major population-serving industries, with total 1999 employment of 8,698 workers. Between 1990 and 1999 the three largest service industries were business services, amusement and recreation services, and educational services. Business services include advertising and other business services, which were identified in the pervious sections as having greater than expected receipts due perhaps to customers from outside Flathead County. Amusement and recreation services include some type of casinos, which have been a rapidly expanding sector in Montana during the 1990s. Educational services include private schools.

There were 7,309 retail trade employees in Flathead County during 1999. The fastest growing category was general merchandise stores, where employment increased 82.6 percent. This category includes major retailers such as Wal-Mart, Shopko, and K-Mart. The second fastest growing was building materials and garden stores, where the number of workers rose 70.6 percent. This category also includes large store retailers such as Big R Ranch and Home and Western Building Centers. Furniture and home furnishings grew 59.1 percent, placing it in third place in terms of growth. But it was only one-half to one-third the overall size of the two fastest growing categories.

Deregulation and structural change within financial services has led to divergent trends in this industry. The three fastest growing categories all more than doubled in the 1990s, but from very small levels in 1990. The fastest growing was credit agencies that increased 376.5 percent, from 34 workers in 1990 to 162 workers in 1999. Similarly, security and commodity brokers and insurance carriers increased 172.2 percent and 156.0 percent, respectively, but from 1990 levels of less than 100 workers. On the other hand, the more traditional, and larger in terms of employment, categories of banks and real estate had much slower growth rates.

This information is summarized in Table 3.10.

Table 3.10 Employment by Retail Trade and Service Industry

Employment by Industry
Flathead County
1990 and 1999

		Employment		Percent Chg
INDUSTRY	SIC	1990	1999	1990-99
Retail Trade		5,057	7,309	44.5%
Bldg-Mat-Garden	52	333	568	70.6
Gen Merch	53	407	743	82.6
Food Stores	54	646	1,021	58.0

Employment by Industry Flathead County 1990 and 1999				
		Employment		Percent Chg
Auto Dlrs-Svc St.	55	594	890	49.8
Apparel -Access	56	196	154	-21.3
Furn & home Furn	57	220	350	59.1
Eating & Drinking	58	2,045	2,814	37.6
Misc. Retail	59	616	769	24.8
Fin., Insur., RE.		1,013	1,472	45.3
Banking	60	445	528	18.7
Credit Agencies	61	34	162	376.5
Sec-Comm-Brks-Sv	62	18	49	172.2
Insurance Carriers	63	75	192	156.0
Ins Agents Brokers	64	172	146	-15.2
Real Estate	65	260	363	39.6
Holding & Invest.	67	9	32	255.5
Services		5,676	8,698	53.2
Hotels & Motels	70	962	1,237	28.6
Personal Services	72	201	249	23.9
Business Services	73	643	1,318	105.0
Auto Repair	75	228	360	57.9
Misc. Repair	76	75	127	69.3
Motion Pictures	78	89	118	32.6
Amus. Rec. Serv.	79	376	741	97.1
Health Services	80	2,003	2,836	41.6
Legal Services	81	147	144	-2.0
Educational Serv.	82	81	181	123.5
Social Services	83	321	507	57.9
Museums, Zoos,.	84	13	18	38.5
Membership Org.	86	252	390	54.8
Engineering.	87	234	403	72.2
Private Households	88	44	50	13.6
Misc. Services	89	7	19	171.4

Source: Montana Department of Labor and Industry

The Flathead economy characteristically has a preponderance of small employment based retail and service establishments. Employment data indicates that most establishments among the various NAICS sectors have fewer than 20 employees. Only hospitals and general merchandise stores escape this trend. (Table 3.11).

Table 3.11 Employees, Payroll and Establishments

NAICS Sector	Employees	Payroll (000's)	Establishments	% establishments w/ < 20 Employees
Retail Trade	4320	73515	499	92.4
Motor Vehicles	638	15844	62	87.1
Furniture & Home Furnishings	158	2827	33	97.0
Electronics & Appliances	101	2089	22	100
Building Materials & Garden Supply	518	11249	60	88,3
Food & Beverage	725	10971	37	73.0
Health & Personal Care	145	2921	26	100
Gasoline Stations	345	3843	51	100
Clothing & Accessories	182	1776	43	100
Sporting Goods	284	3513	43	93.0
General Merchandise	814	13209	15	53.3
Miscellaneous Retail	325	3507	83	97.6
Finance & Insurance	1116	40851	152	88.8
Credit Intermediation	703	23849	49	73.5
Security & Commodity	95	5961	32	96.9
Insurance Carriers	318	11041	71	95.8
Real Estate & Rental	482	7388	143	95.8
Real Estate	316	5475	113	96.5
Professional,Scientific & Technical	823	19117	220	99.1
Health Care & Social	3121	76338	247	91.9
Ambulatory Health	1000	32637	163	93.9
Hospitals	Na	Na	3	0.0
Nursing & Residential	576	9790	16	68.8
Social Assistance	Na	Na	65	96.9
Arts & Entertainment	510	7365	84	92.9
Accommodation & Food	3625	40190	328	83.5
Accommodation	1039	15538	84	88.1
Food & Drinking	2586	24652	244	82.0
Source: County Business Patterns, 1998				

A statistical procedure called shift-share analysis provides a retrospective view of employment growth due to macroeconomic factors. Table 3.12 allocates a sector's employment gain, or loss, over the period 1990-1999 according to three factors affecting employment; share, mix and a competitive component. It is the share, mix and competitive components that sum to the total change in employment experienced by that respective SIC over the nine-year period of analysis. Shift-share analysis permits an examination of the area's strengths and weaknesses, as well as the economy's diversification.

The "share" component reflects a sector's growth attributable to statewide growth in general. An examination of Table 3.12 reveals that retail trade employment growth was mostly attributable to general statewide economic growth. Similarly for services, finance and insurance and real estate. Hence, employment growth is significantly dependent on a strong statewide economy. The 'mix" component is one part of the "shift" parameter. It reflects whether an area's employment growth is attributable to a disproportionate share of employment that is in high growth or slow growth sectors. For example, the finance sector grew rapidly in the 1990's; hence if an area had a disproportionate share of employment in this sector, it too would grow more rapidly than the state's growth in the same sector. Business services in the Flathead had a significant mix component in the decade's employment growth. Similarly for SIC 52, building materials and garden supplies, as well as SIC 53, general merchandise, a large segment of employment growth in these sectors is attributable to a disproportionate level of employment in a rapidly growing statewide sector.

The second component of the "shift" parameter is the competitive component. High employment gains in this sector identifies where employment differentials exist due to the nature of the local environment. Often, it is the competitive component that provides direction into possible local economic development efforts since it reflects something in the economy's structure that permits the sector to increase employment. Competitive components are evident for SIC's 53, general merchandise, 54 food stores, 61 credit agencies, and SIC 80, health services.

Table 3.12 Shift-Share Analysis of Flathead County Employment

SIC Sector	SIC Code	Share	Mix	Competitive	Total Employment Change, 90-99
Retail Trade		1485	77	688	2251
Building Materials & Supply	52	98	105	32	235
General Merchandise	53	119	13	204	336
Food Stores	54	190	-82	268	375
Auto Dealers	55	175	64	57	296
Apparel & Accessories	56	57	-64	-36	-42
Furniture & Home	57	65	24	42	130
Eating & Drinking	58	600	66	103	769
Miscellaneous Retail	59	181	-9	-18	153
Finance, Insurance & Real Estate		298	27	132	457
Banking	60	131	-56	9	83
Credit Agencies	61	10	31	87	128
Securities	62	5	5	20	31
Insurance Carriers	63	22	25	70	117

SIC Sector	SIC Code	Share	Mix	Competitive	Total Employment Change, 90-99
Insurance Agents	64	50	-24	-52	-26
Real Estate	65	76	42	-16	103
Holding & Investment	67	3	-2	22	23
Services		1668	1270	84	3022
Hotels & Lodging	70	282	47	-55	275
Personal Services	72	59	-51	40	48
Business Services	73	189	616	-130	675
Auto Repair Services	75	67	65	0	132
Miscellaneous Repair	76	22	-13	43	52
Amusement & Recrea.	79	110	209	45	365
Health Services	80	588	47	198	833
Legal Services	81	43	-24	-22	-3
Education Services	82	24	19	57	100
Social Services	83	94	144	53	186
Museums	84	4	6	-5	5
Membership Org.	86	74	126	-62	138
Engineering Services	87	69	64	36	169
Miscellaneous Services	89	2	4	6	12

Source: Montana Department of Labor and Industry

3.2.5.6 Montana, Flathead County and Kalispell Economic Relationships

Table 3.13 illustrates the relationship between the number of establishments, sales, and payroll for Montana, Flathead County, and the Kalispell retail areas in the census year 1997. First, looking at Kalispell to Flathead ratios of establishments, sales and payroll, the relative importance of the Kalispell trade area to the county is demonstrated. For instance, in accommodation and food services, Kalispell captures almost 30 percent of the establishments, but maintains 37 percent and 36 percent of the countywide sales and payroll. A closer look at food service and drinking places reveals that Kalispell provides nearly half the payroll generated in the county. Likewise for supermarkets, food and beverage stores, furniture and home furnishings. Health sectors also appear to be concentrated within the Kalispell city limits. Hence, the Kalispell area does serve as the major retail hub for the Flathead economy.

Table 3.13 also depicts the 1997 sales per establishment for the city, county and state. These ratios illustrate the relative sales performance of the Kalispell area. In several categories, drinking places, food and beverage stores, supermarkets, and gasoline stations, sales per establishment are considerably higher than the county and state levels. This may indicate that relatively larger firms are concentrated in the city limits.

Table 3.13 Kalispell, Flathead and Montana Comparisons

Sector	Kalispell/ Flathead	Kalispell/ Flathead	Kalispell/ Flathead	Sales/ Establishment (000's $)	Sales/ Establishment (000's $)	Sales Establishment (000's $)
	Establishments	Sales	Payroll	Montana	Flathead	Kalispell
Accommodation &Food Services	.2978	.3708	.3683	365.625	414.223	515.779
Hotels & Motels	.2679	.2651	.2708	584.587	733.393	725.867
Food & Drink	.3154	.4457	.4380	331.562	351.660	496.961
Restaurants				367.463	345.729	
Drinking Places	.2051	.3731	.3220	241.100	360.615	655.875
Health Care	.6359	.7469	.7694	456.546	398.938	468.605
Ambulatory Health Care	.6623	.7727	.8144	476.547	437.084	509.931
Physicians	.7414	.8590	.8615	733.692	692.741	802.628
Dentists	.7778	.7492	.8241	331.012	347.833	335.036
Other Health	.5652			205.759	169.543	
Chiropractors	.5882	.6720	.6745	147.213	164.824	188.300
Retail	.4947	.5571	.5767	1542.862	1466.069	1650.932
Motor Vehicles	.4839	.5510	.5687	3201.476	2790.548	3177.633
Auto Parts, Acc	.5862	.6488	.6670	887.850	925.276	1024.059
Tire Dealers	.6364	.6460	.6529	1076.192	1065.364	1081.429
Furniture	.4375	.4832	.5633	711.207	516.313	570.286
Appliance Stores	.6316	.6867	.5748	792.477	734.737	798.833
Building Mat. & Garden Equip	.5273	.5314	.5213	1609.059	1553.164	1565.241
Food & Bev.	.3784	.5365	.5435	2785.118	3241.324	4595.643
Supermarkets	.3333	.5460	.5477	3909.792	4639.625	7600.375
Health & Per. Care	.5556	.6288	.7267	793.713	543.111	614.667
Gasoline Stations	.4048	.3591	.4038	1322.574	1427.571	1266.353
Clothing & Acc.	.6170	.6895	.6705	471.258	359.638	401.862
Jewelry, Leather	.4000	.5818	.5564	416.744	323.800	471.000
Sporting Goods	.4348	.5293	.4914	642.668	715.348	870.900

Source: U.S. Census Bureau, 1997 Economic Census

3.2.6 Other Infrastructure

3.2.6.1 Electricity

Electrical service from Flathead Electric Coop (FEC) is available along the entire perimeter of Section 36. According to Dan Anderson of FEC, the current above-ground systems along West Reserve Drive, Stillwater Road and Four Mile Drive will be upgraded within the next year.

3.2.6.2 Natural Gas

Natural gas service is available along the U.S. Highway 93 corridor and along portions of West Reserve Drive and Four Mile Drive. An 8-inch line extension is planned along the Four Mile Drive alignment to link with the proposed by-pass highway corridor. Line extension policies of Montana Power would apply to future developments within Section 36.

3.2.6.3 Telephone and Fiber Optics

Telephone service is available through CenturyTel along the perimeter of Section 36. Telephone cable is buried on all sides with additional aerial cable along Four Mile Drive in the area of North Haven Subdivision and along U.S. Highway 93. Buried fiber optic cable borders the NE ¼ of Section 36 along West Reserve Drive and Highway 93 North.

3.2.7 Aesthetics and Noise

The property does not exhibit any unusual or extraordinary aesthetic features uncommon to the general area. Most of the property is farmed and lacks natural amenities such as highly variable topography, surface water, and native vegetation. To some, the property exhibits open space qualities in close proximity to a major urban area. Contributing to this perception is a substantial area along Highway 93 that is undeveloped. Confounding this perception is a 2-tower electrical transmission corridor that bisects the property and a proposed highway by-pass that would also bisect the property.

The primary source of noise within the existing environment for Section 36 is the roadside environment of HWY 93 North, West Reserve Street, Stillwater Road, and Four-Mile Drive. The Sommers – Whitefish Final EIS prepared for the expansion of Highway 93 examined the noise environment and existing noise levels along the Highway 93 corridor. According to the FEIS, existing noise levels within 100 feet of the highway are approximately 64dBA. Reserve and Stillwater Drive receive considerable traffic during peak hours with estimated noise levels of 47-52 dBA. The paved portion of Four Mile Drive produces noise at peak traffic hours and the associated athletic events traffic.

The Kalispell Youth Athletic Complex has been in operation for five years. During the tenure of their occupancy the DNRC has received no complaints regarding noise generated from youth athletic events. Parking lots are located to eliminate spectator "horn honking".

Existing agricultural uses within the remainder of the section produce a minimal amount of noise.

3.2.8 Access to and Quality of Recreation

Trust lands are generally open for use by the public. This "right" of access requires permission by the underlying lessee, if applicable, to help avoid conflicts of use. This is the situation with all but the SE ¼ of Section 36. Farming practices are under lease for the majority of Section 36 and unrestricted public use of the property could adversely impact crop production, livestock containment, etc. However, approximately 134 acres in the SE ¼ is available for general recreational use through a lease arrangement with the City of Kalispell. A proposed Meridian bike path is expected to be built and terminate at the ball field complex within the next year.

3.3 Description of Relevant Effected Resources – Physical Environment

3.3.1 Soils

Soils in the project area were surveyed by the Natural Resources Conservation Service in 1946. At that time, a publication titled, *Soil Survey-Upper Flathead Valley Area Montana*, was published. Since the original publication was printed, updated volumes have been distributed. The information for this document is derived from volume 4, which was printed in 1960. Although the soils have not changed since the original survey, the names of each individual soil series may have changed.

Soils within the project area, Section 36, T29N, R22W, have been divided into five series classifications: Kalispell, Blanchard, Tally, Prospect and Mires. A map of the soils is attached to this document.

3.3.1.1 Descriptions

Kalispell Series

The Kalispell series is the predominant soil found in the project area. In general, this series consists of deep, medium-textured, well-drained soils that have developed on outwash fans and glacial lake and stream terraces.

The majority of the northern half of the project area is in land capability class IIIe-2. This land capability class is easily tilled and permeable to roots, air, and moisture. These soil types are typically in areas of low rainfall and are slightly droughty. Due to the low moisture, these soils are more suited for small grains.

Blanchard Series

The Blanchard series soils are found on the eastern portion of the project area. Characteristics of these soils include fine to very fine soils with little structure. The depth of the soils range from shallow to moderately deep. Due to the fine material that comprises the soil, it is particularly vulnerable to wind erosion. The parent material is derived from argillite and quartzite containing enough limestone to make the materials calcareous.

Tally Series

The Tally series is closely associated with the Blanchard series. Moderately deep, moderately sandy soils over loose sand are characteristic of this series. These soils were developed in glacial outwash and old stream deposits on terraces and alluvial fans.

Prospect Series

The Prospect series consists of deep, loamy soils developed from medium-textured, calcareous, glacial till. The parent material was derived mainly from quartzite, argillite and dolomitic limestone. The soils are well-drained and moderately permeable. This soil series is found on the western half of the project area.

Muck and Peat

These soils are located in a very small portion of the southeastern quarter of the project area, associated with the DNRC office site. The map unit consists of the deposits of mosses, rushes, grasses, sedges, cattails, trees and other woody plants in various stages of composition. The depth of these deposits over mineral soil ranges from 1 to 4 feet. These areas are moist or saturated most or all of the time unless drained artificially. Areas of muck and peat not flooded consist mainly of organic material. Some areas can be drained enough to allow plowing and seeding of grasses.

3.3.1.2 Interpretations

Land capability is a grouping used to show relative suitability of soils for tilled crops, hay, pasture, forestry or wildlife and to show the difficulties or risks in using them. Table 3.14 below exhibits the land capability class for each soil type in the project area. A completed description of the rating process is attached.

The majority of the northern half of the project area is in land capability class IIIe. Soils in this land capability class are suited for regularly cropping, easily tilled and permeable to roots, air, and moisture. These soil types are typically in areas of low rainfall and are slightly droughty. These lands are suited to irrigation which would likely result in increased yields.

The southeastern quarter of the project area has recently been leased for recreational use. An ocular survey of this area shows that the soils are suited to the grass cover established, though it must be noted that the recreation fields are irrigated.

Building site development interpretations are based upon the kind and degree of soil limitations for a particular development type. Table 3.14 below shows the soil ratings and limitations for shallow excavations, dwellings and small commercial buildings, roads and streets, and lawns and landscaping for each soil type in the project area. A completed description of the rating process is attached.

The majority of the section contains soil type Ke and closely associated soils. These soils generally require special design features for shallow excavations due to caving. The caving action is a result of the soil texture, rock content, and slope. Limitations for building developments (other than shallow excavations) are slight, meaning that the conditions are generally favorable for the uses listed on Table 3.14.

Construction Materials interpretations gives information regarding the soils as a source for roadfill, sand, gravel, and topsoil. The ratings in Table 3.14 for construction materials are good, fair to poor for roadfill and topsoil. The soils are rated as probable or improbable for use as a source for sand and gravel. A completed description of the rating process is attached.

The soils found are in the project area mostly rated as 'good' for road fill and 'fair to poor' for use as topsoil. Due to the percentage of silty fines found in the material, it is improbable that the soils are suitable as a sand or gravel source. Small pockets of suitable material may be found within the project area, but it is unlikely that large quantities of suitable material would be found in a single area.

Table 3.14 Soil Use Interpretations

Map Symbol	Land Capability	Building Site Development						Construction Materials			
		Shallow Excavations	Dwellings w/o basements	Dwellings w/ basements	Commercial buildings	Local road/streets	Lawns Landscaping	Roadfill	Sand	Gravel	Topsoil
Bs	4E	Severe	Slight	Slight	Slight	Slight	Moderate	Good	I	I	Poor
Bt	4E	Severe	Moderate	Moderate	Severe	Moderate	Moderate	Good	I	I	Poor
Kd	6E	Severe	Severe	Severe	Severe	Severe	Severe	Poor	I	I	Poor
Kb	3E	Severe	Slight	Slight	Slight	Moderate	Moderate	Good	I	I	Poor
Kc	4E	Severe	Moderate	Moderate	Moderate	Moderate	Moderate	Good	I	I	Poor
Ke	3E	Severe	Slight	Slight	Slight	Moderate	Slight	Good	I	I	Fair
Kg	3E	Severe	Slight	Slight	Slight	Moderate	Slight	Good	I	I	Fair
Kk	4E	Severe	Moderate	Moderate	Moderate	Moderate	Moderate	Good	I	I	Fair
Kza	3E	Severe	Slight	Slight	Slight	Moderate	Slight	Good	I	I	Fair
	6S	Slight	Slight	Slight	Slight	Severe	Severe	Poor	I	I	Poor
Kzb	3E	Severe	Slight	Slight	Slight	Moderate	Slight	Good	I	I	Fair
	6E	Slight	Slight	Slight	Slight	Severe	Severe	Poor	I	I	Poor
Ms	5W	Severe	Severe	Severe	Severe	Severe	Severe	Poor	I	I	Poor
Pd	6E	Severe	Severe	Severe	Severe	Severe	Severe	Fair	I	I	Poor
Pb	3E	Slight	Slight	Slight	Moderate	Moderate	Moderate	Good	I	I	Poor
Pc	4E	Moderate	Moderate	Moderate	Severe	Moderate	Moderate	Good	I	I	Poor
Ta	4E	Severe	Slight	Slight	Slight	Moderate	Slight	Good	I	I	Fair
Tb	4E	Severe	Slight	Slight	Slight	Moderate	Slight	Good	I	I	Fair
Td	4E	Severe	Slight	Slight	Moderate	Moderate	Slight	Good	I	I	Fair

Viewer should look at the attached rating sheets for justifications of ratings.

3.3.2 Wildlife

Section 36 is intensively managed for agricultural purposes, primarily, and recreation, secondarily. The DNRC office area is a third level of use and activity on the property. As a general description, the property lacks habitat diversity and is relatively sterile for wildlife use. The farming practices offer no year-round benefits to wildlife. Seasonal opportunities are primarily limited to food for migrating waterfowl, resident Hungarian partridges, pheasants, and other small mammal and avian species. The sports field complex offers some benefit to wildlife mostly with regard to drinking water available during periods of irrigation. The storm detention pond offers a similar function when water is present. The most diverse habitat is offered in association with the DNRC office area. Plantings of shrubs and trees around the building complex offer some wildlife cover and food opportunities. Threatened bald eagles occasionally fly over this area. The closest bald eagle nests are at Ashley and Talley Lakes and Section 36 is not within the home range of these nest sites.

3.3.3 Vegetation

All but the SE ¼ of Section 36 is intensively farmed for cereal crops, hay, and/or grazing. There is no known native vegetation within the farmed areas. The SE ¼ is now being actively managed for developed sports fields. Within that complex is a 300+ year old tree known as the Spring Prairie tree, which is recognized as having historical significance. Please consult section 1.4.2.6 for more information on this Ponderosa Pine. The most diverse assemblage of tree, grass, and shrub vegetation is associated with the DNRC office complex. Most of the shrubs and trees in this area were planted as landscaping. A low-lying area west of the DNRC offices exhibits occasional wetland characteristics. The wet features of this site cannot be sustained during dry years. Besides the sports field area and DNRC office area, other landscape features can be observed along Highway 93, which was planted with trees and natural grasses following reconstruction of the highway to 5 lanes.

3.3.4 Aquifer

The upper Flathead River valley (Kalispell valley) is an intermontane valley north of Flathead Lake that is bordered on the east by the Swan Range, on the north by the Whitefish Range, and on the west by the Salish Mountains. The Flathead River and its major tributaries, the Stillwater and Whitefish Rivers, drain the valley. Elevations range between 7,528 feet on the crest of the Swan Range to 2,892 feet, the summer pool elevation of Flathead Lake. The geomorphology consists of a low-relief floodplain along the Flathead River to rolling uplands that contain glacial landforms. The valley is home to approximately 71,000 people. Outside of the suburban areas, the valley is rural residential and agricultural of various crops and introduced and native grasses, and deciduous forests in low-lying areas and conifer forests in hilly and mountainous areas.

3.3.4.1 Location Reference System

Geographic locations of wells referred to in this report have been assigned location and identifications numbers. The location is based on the General Land Office System of land subdivision and shows the location by township, range, section and tract. Letters (a, b, c or d) specifying tract location within a section are assigned in a counter-clockwise direction, beginning with "a" in the northeast quarter. The well number has been assigned by the Montana Bureau of Mines and Geology (MBMG) as a reference number within the statewide groundwater information center.

3.3.4.2 Identification of Wells In Study Area

A list of water wells that are located within the study area is presented in **Appendix H**. This table provides information relative to well depth, completion, and type of use. Information contained on

this table is used throughout this report. A corresponding map showing the well locations is provided as Figure 3.

3.3.4.3 REGIONAL GEOLOGY

The Kalispell valley is a northwest trending intermontane basin forming the southern extension of the Rocky Mountain Trench. The valley is bounded on the east by the Swan-Whitefish fault located along the base of the Swan Range and on the west by the Kalispell fault at the base of the Salish Mountains. The mountains rise abruptly 4,500 feet above the valley floor. The mountain ranges consist mostly of slightly metamorphosed sedimentary rocks of the Belt Series.

Gravity data indicate the Cenozoic basin-fill in the central part of the valley may be as much as 3,000 feet thick (Noble and others, 1982). Although Tertiary rocks are not exposed, it is believed that Miocene and Oligocene sediments rest unconformably on Precambrian bedrock. It is estimated that 600 to 1,000 feet of Wisconsin-age Pleistocene glacial deposits overlie the Tertiary sediments.

The upper Flathead River valley and the surrounding mountains were covered by glacial ice during the latest Pleistocene time (15,000 to 25,000 years ago); ice thickness in the valley reached about 4,000 feet.

Glacial and alluvial deposits mantle the underlying Tertiary sediments. The glacial units were deposited during and after the retreat of the last glacier from the valley. A surficial geologic map shows that Section 36 is mapped as glacial outwash deposits (see Figure 4). These deposits consist of light brownish gray and light to dark brown stratified gravel, sand, and silt. The average thickness is approximately 50 feet.

3.3.4.4 GROUNDWATER RESOURCES

Groundwater is one of the Flathead Valley's most important natural resources and is essential to the local economy. Groundwater provides 95 percent of the valley's potable water supply requirements and more than half of the irrigation supply water. Economic growth in the Kalispell valley is directly dependent on optimal development of the groundwater resources.

Deep Artesian Aquifer

The basic hydrogeologic framework and the occurrence and movement of groundwater in the Kalispell valley was initially defined by Konizeski and his co-investigators in 1968. They broadly classified two types of flow systems (1) artesian aquifers and (2) water table aquifers. The artesian aquifers were further separated on the basis of well depth and pressure-head differences into a Pleistocene deep artesian aquifer and a Pleistocene shallow artesian aquifer. The deep artesian aquifer occurs in the upper part of the Kalispell valley, while the shallow artesian aquifer is present in the lower valley near Creston, Montana. Konizeski's report (1968) was completed prior to installation of most of the large irrigation wells (circa 1970's and 1980's) that are completed in the deep artesian aquifer. Our understanding of the deep groundwater flow system has evolved considerably since Konizeski's report was published and many of the early theories regarding the deep artesian aquifer have been refined. Recent work conducted in the central part of the Kalispell valley indicates there are multiple water-bearing zones with depth but this package of sediments responds as a single, confined aquifer demonstrating anisotropic characteristics (Shapley, undated; Noble, 1998).

This nomenclature was recently modified in which the shallow, intermediate, and deep artesian aquifers have been combined into a single unit referred to as the deep aquifer (Smith, 2000). The deep aquifer refers to the laterally continuous sand and gravel deposits that are capable of producing large volumes of water and is the valley's primary water source. The deep alluvium is

overlain by a confining layer that is composed of thick beds of compacted silty and clayey gravel (i.e. glacial till) and laminated beds of silt and clay (i.e., lakebed deposits). Water levels in wells that encounter the deep alluvium may rise 100 to 200 feet above the zone of water bearing strata from the hydraulic pressure exerted by the confining layer. This type of aquifer is referred to as an artesian aquifer.

A schematic cross-section showing the general subsurface conditions is presented in Figure 5. This cross-section transects the valley in an east-west direction near the boundary of Township 29 North and 30 North (i.e., Kelly Road on the east side and Spring Prairie Road on the west side). As shown, the deep alluvium (deep artesian aquifer) is overlain by 200 to 300 feet of relatively impermeable strata (i.e., glacial till and lakebed deposits) and extends the entire width of the valley. The deep artesian aquifer is the primary source of groundwater within the study area.

Extent, Depth, and Thickness

Hydrogeologic information indicates the deep artesian aquifer is present valley-wide, underlying an area of approximately 300 square miles. According to Smith (2000), the deep aquifer is generally found at depths greater than 100 feet below the ground surface (bgs). A map displaying the depth to the deep aquifer within the study area is presented in Figure 6. As shown, the depth to the aquifer in this area varies from approximately 150 to 200 feet bgs. The thickness of the aquifer has not yet been defined. Well logs indicate the aquifer is at least 200 feet. The known deepest well in the valley (No. 152969 – Section 18, Township 29 North, Range 21 West) is 766 feet and the thickness of the deep aquifer is 360 feet.

Groundwater Flow

In general, groundwater in the deep artesian aquifer flows from the valley margins toward the center and then southeasterly toward Flathead Lake. A potentiometric (i.e., hydraulic head) map for the deep artesian aquifer within the study area is shown in Figure 6. The potentiometric contours indicate the groundwater flow converges in this area with the predominant flow direction to the southeast. The aquifer is primarily recharged from snowmelt infiltration in the surrounding mountain ranges.

Water Level Fluctuations

Both long-term and short-term water-level fluctuations were evaluated as part of this analysis. The longest water-level data that exists in the valley is for the Trinity Lutheran Cemetery well (well no. 131524) and is for approximately 40 years. A hydrograph presenting the historic water-level fluctuations is presented in Figure 7. As shown, the data displays the period from 1963 to 1973 was a time of dynamic equilibrium during which time discharge equaled recharge. During the mid 1970's to mid 1980's, most of the large capacity irrigation wells and other new municipal wells were constructed. Heavy pumping caused about a 5-foot decline in the potentiometric surface. This drawdown was further exacerbated by draught conditions of the late 1980's, which resulted in an additional 5-foot decrease. However, above normal precipitation between 1992 and 1997 provided ample recharge to nearly return water levels to predevelopment stage. However, significantly below normal precipitation, primarily in the form of snowpack, has resulted in a decline of the water levels during the last 3 years. This information displays how resilient the aquifer is in responding to short-term events.

A continuous water-level recorder at the Flathead Valley Community College (FVCC) (well no. 169098) also displays a similar pattern with respect to recent events (see Figure 8). The water-level record begins in early 1996 and represents the later part of the recovery period. The data again demonstrates that the wet cycle of the mid 1990's, particularly 1996 to 1997, resulted in significant recharge back into the aquifer. In comparison, the subsequent dry years have resulted in approximately a 5-foot per year decline in the potentiometric surface.

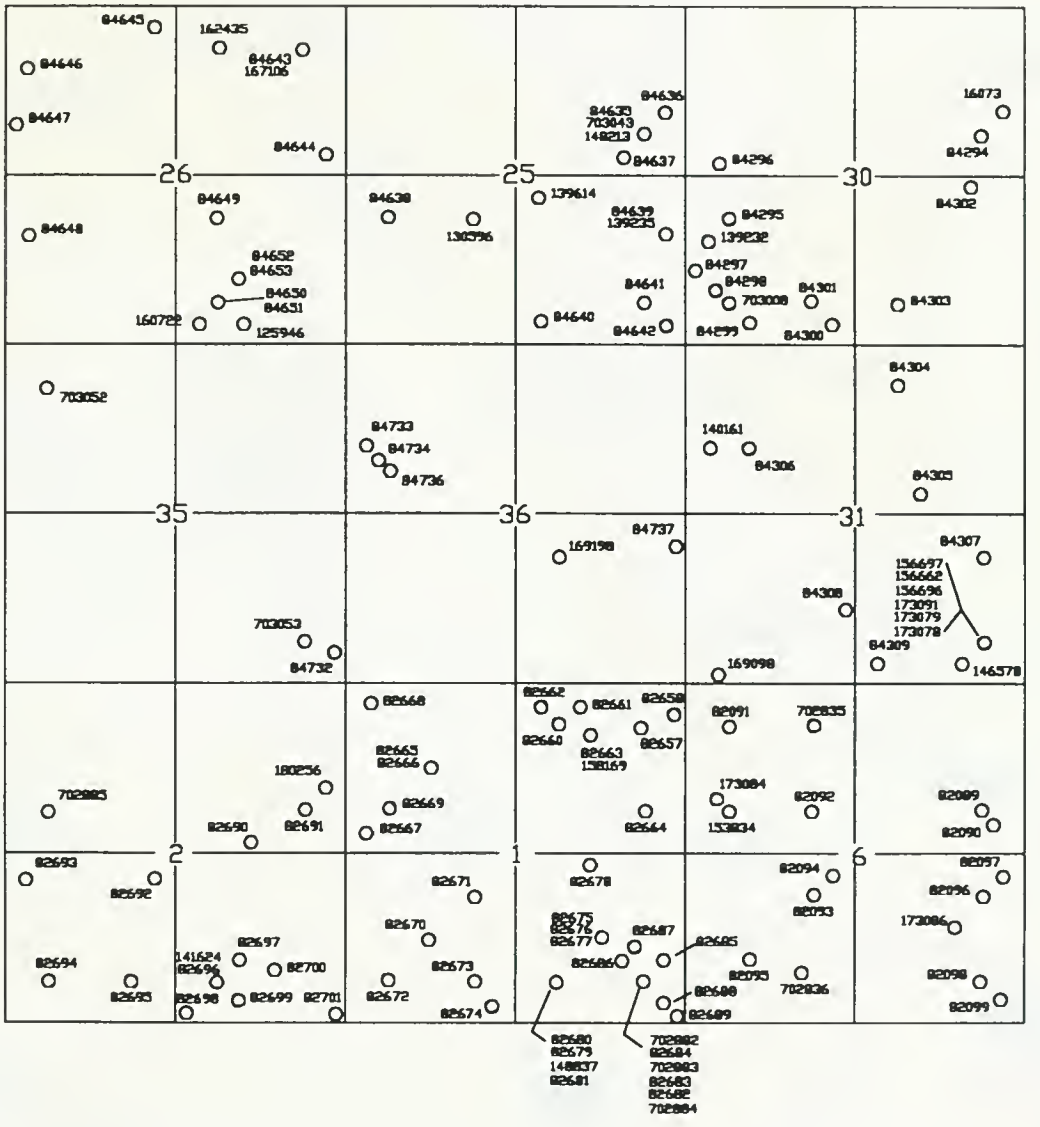


Figure 3. Well Location Map

Environmental Impact Study
Section 36, T29N, R22W

220226 wellmap.dwg

3000' 1500' 0 1500' 3000'

Scale: 1" = 3000'

Project Manager: R. Noble Draftsman: J.R.

6-08-01

LAND & WATER CONSULTING, INC.
(406) 257-7200 P.O. Box 8027
(406) 257-7205 FAX Kalispell, MT 59904

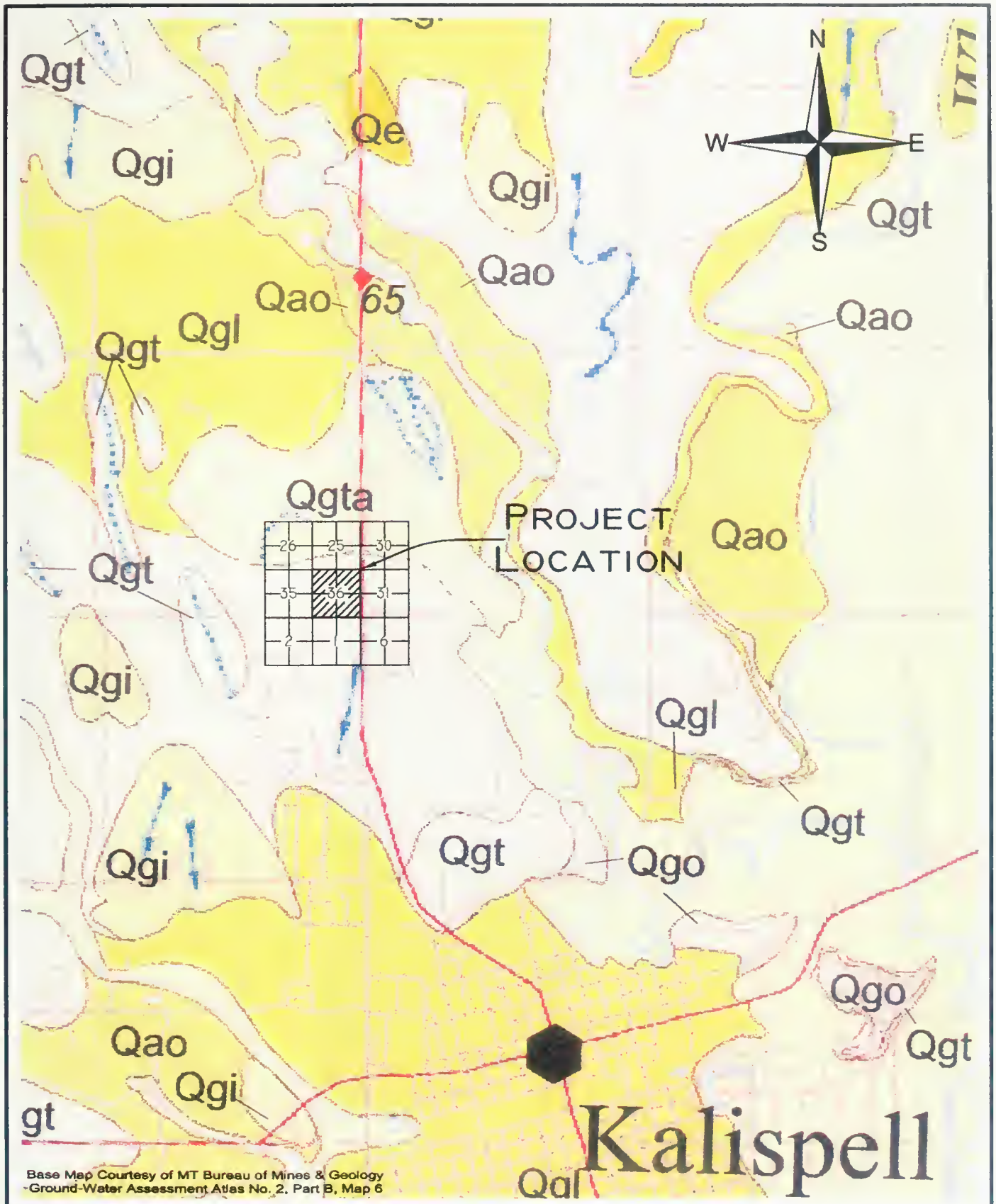


Figure 4. Surficial Geologic Map
Environmental Impact Study
Section 36, T29N, R22W

220226 map6.dwg

15,000' 7500' 0 7500' 15,000'
Scale 1" = 15,000'
Project Manager: R. Noble Draftsmen: J.R.

6-08-01

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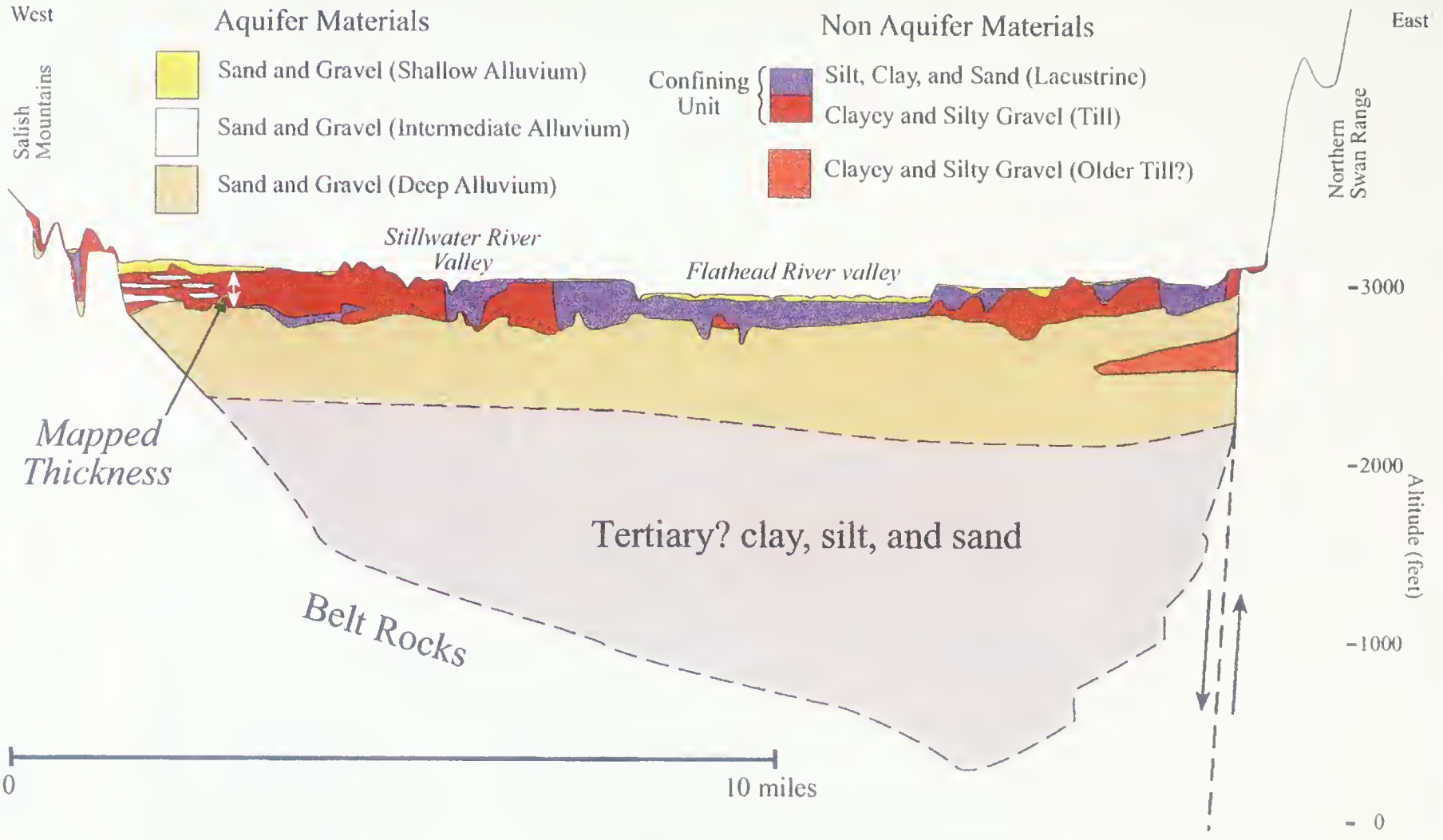

Base Map Courtesy of MT Bureau of Mines & Geology
Ground-Water Assessment Atlas 2, Part B, Map 9

220226	Figure 5. Diagrammatic Cross Section	map9-xc.dwg	6-08-01
	Environmental Impact Study Section 36, T29N, R22W		
Project Manager: R. Noble		Draftsman: J.R.	

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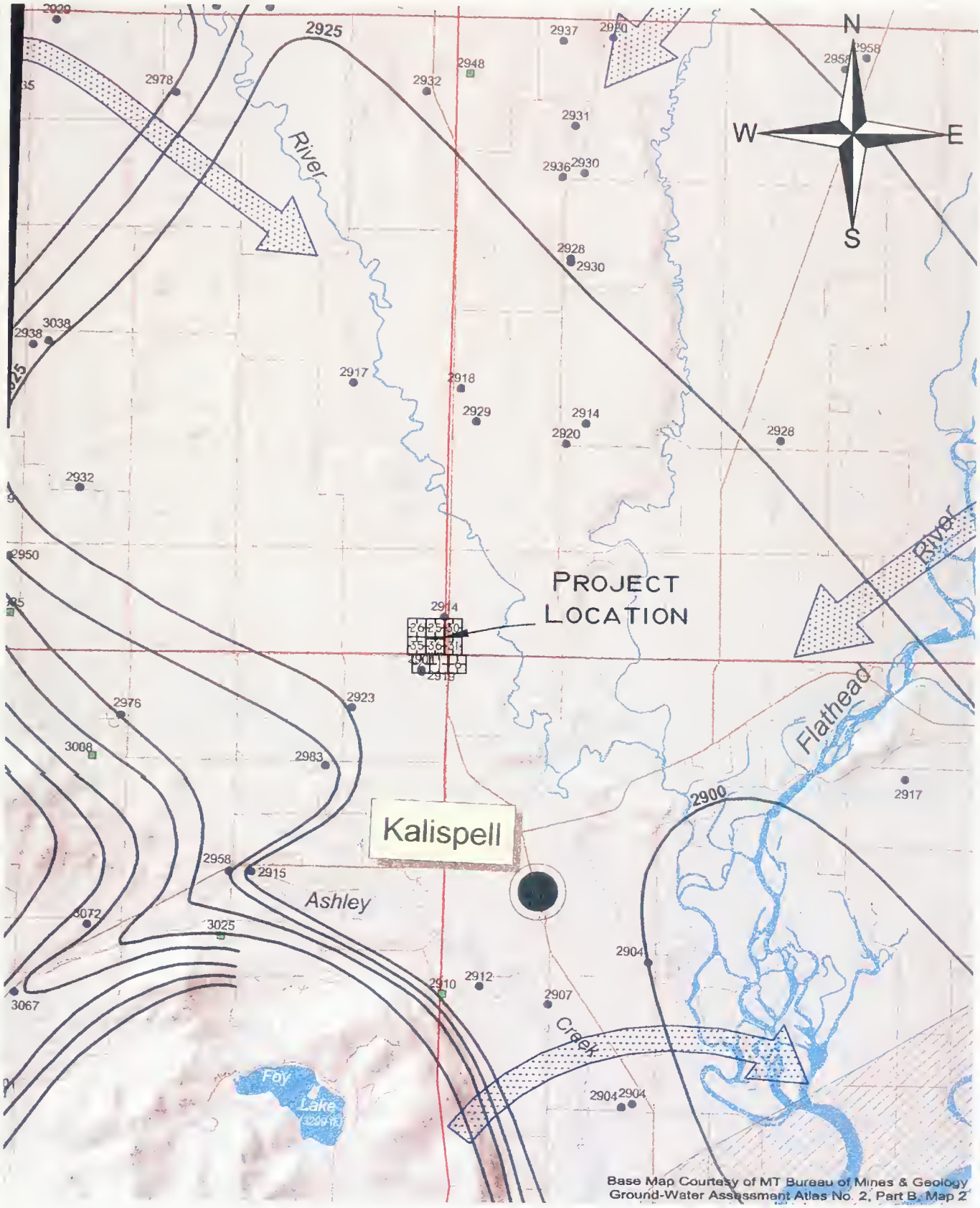

Figure 6. Potentiometric Surface Map

Environmental Impact Study
Section 36, T29N, R22W

220226 map2.dwg

40,000' 20,000' 0 20,000' 40,000'

Scale 1" = 40,000'

Project Manager R. Noble Draftsman: J.R.

6-08-01

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Figure 7
Water Levels -Trinity Lutheran Cemetery Well (131524)

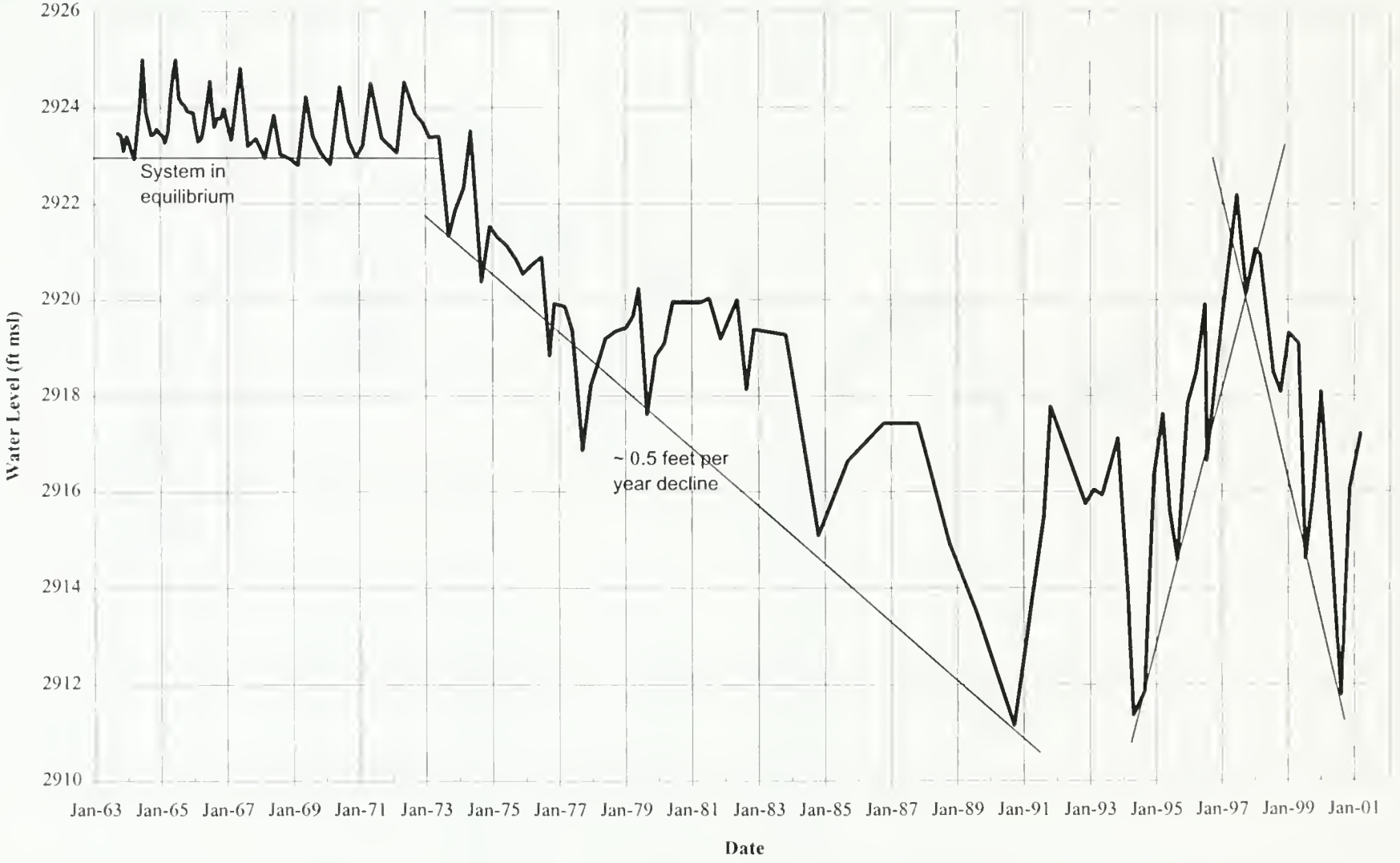
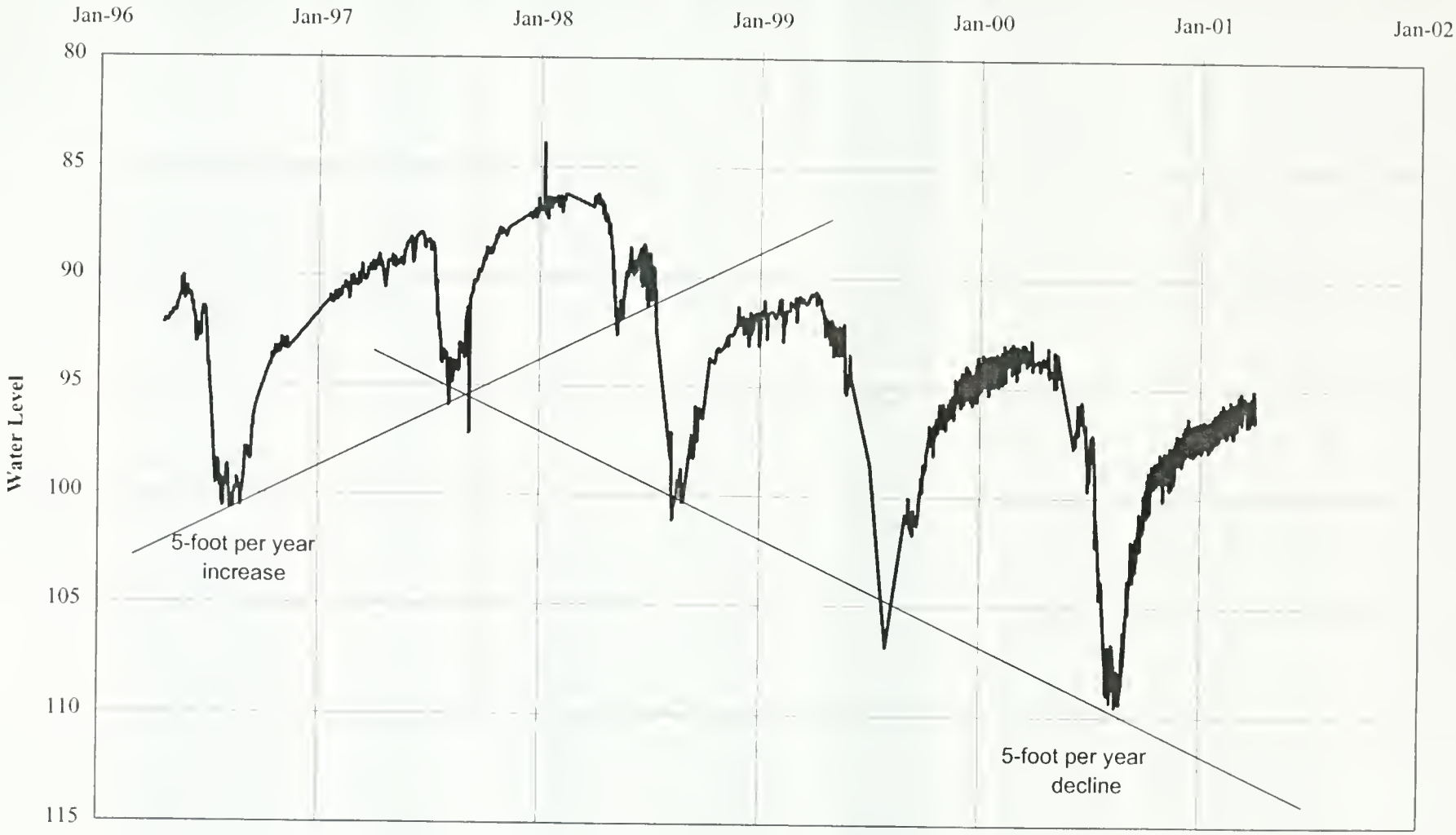


Figure 8
Water Levels - FVCC Well (169098)
Combined LWC and MBMG Data



The historic record indicates the maximum amount of decline has been about 12 feet. Considering the aquifer is at least 360 feet thick, this would amount to approximately a reduction of 3 percent of the groundwater in storage. However, the historic record also indicates the reduction was transitory and that no net loss occurred after adequate precipitation recharged the aquifer.

3.3.5 Air Quality

Kalispell and its immediate surrounding area have been designated as a non-attainment area for particulate matter 10 micrometers or smaller in size (PM-10). This designation is based on past violations of the Federal Clean Air Act's national ambient air quality standards (NAAQS) for PM-10 during winter months in Kalispell. The U.S. Environmental Protection Agency (EPA) has designated the Kalispell area as a "Moderate" PM-10 non-attainment area. The principal sources of PM-10 that contribute to the past air quality violations were identified as dust from road sanding materials suspended in the air and particulates generated by wood burning stoves for home heating. Measures like mandatory use of liquid deicers have been successfully implemented and help reduce wintertime PM-10 levels in the community.

Section 36 is outside the designated non-attainment area. Two thirds of Section 36 is currently farmed using conventional farming techniques including ground disturbance for seed bed preparation and harvesting. These practices result in seasonal air quality impacts due to dust and windblown dirt. The remaining third of Section 36 is dedicated to the youth athletic facility and the DNRC offices. The ballfields are treated with dust abatement materials to minimize dust particulates. Parking areas are paved and trails will have application of woods chips to further reduce dust emission.

3.4 Description of Relevant Non-Affected Resources – Physical Environment

3.4.1 Geology

The property does not exhibit any unstable or fragile geologic characteristics. Refer to related discussions under "Soils". There are no exposed rock outcroppings or excessive slopes. Seismic conditions are no different that what is applicable to the broader planning jurisdiction.

3.4.2 Surface Water

The property has no permanent surface water features, other than the artificial storm detention pond and low-lying area associated with the DNRC office area. Refer to related discussions under "Hydrology" (Section 3.3.4).

3.4.3 Unique, Endangered, or Fragile Environmental Resources

There are no known threatened or endangered species associated with the property. A variety of raptor species may be observed on occasion during migratory periods but none or known to depend on the property for critical habitat needs. Refer to document referenced in Section 1.4.2.6.

3.4.4 Historical and Archaeological Sites

A historical landmark, the Spring Prairie Tree, is present within the SE1/4 of Section 36. This tree is currently being protected as a historical feature through the lease agreement with the City of Kalispell for operation of the sports fields. Refer to related EA as described in Section 1.4.2.6. The Tobacco Plains Trail passed near this historic ponderosa pine tree. The trail was used for hundreds of years by the Kootenai Indians on their way to the eastern Montana plains by way of the Helgate Pass east of Missoula. The

Montana Historical Society was contacted in order to identify any other cultural resources on Section 36 and none were reported to exist.

3.5 Description of Areas Related to Cumulative Effects

The DNRC must consider cumulative impacts when conducting an environmental impact statement. The pertinent administrative rule that defines the Department's obligation in respect to cumulative impacts is listed below.

"Cumulative impact" means the collective impact on the human environment of the proposed action and when considered in conjunction with other past and present actions related to the proposed action by location or generic type. Related actions must also be considered when these actions are under concurrent consideration by any state agency through pre-impact studies, separate impact statement evaluation, or permit processing procedures.

Part 1 of this environmental impact statement does not authorize any specific land use to take place but presents land development alternatives and considers effects on the human and social environment of these alternatives including cumulative effects. Specific attention has been allocated to the past state actions regarding development of the SE 1/4 of the property as a youth athletic complex, location of the BPA power lines, MDT highway easement purchase, and MDT analysis of the highway 93 bypass. Past and present private land development has been considered relative to the proposed development alternatives.

The development scenarios described in Chapter 4 help to describe the direct, secondary, and cumulative effects of development. Areas of primary consideration include the following categories.

3.5.1 Human Environment

- **Land Use:** Conversion from ag-based use to urban uses
- **Roads and Traffic:** Increased traffic and internal road system
- **Water Delivery and Supply:** Extension and capacity of city water system
- **Sewage Collection and Treatment:** Extension and capacity of city sewage system
- **Population and Economy:** Relationship to jobs, taxes, and trust payments
- **Other Utility Infrastructure:** Availability of other utility infrastructure
- **Aesthetics and Noise:** Relationship of the rural environment to the built environment
- **Access to and Quality of Recreation:** Existing and anticipated changes to recreation/public access

3.5.2 Physical Environment

- **Soils:** Loss of topsoil from development of structures and roads
- **Vegetation:** Loss of farm land
- **Aquifer:** Relationship of water demand to aquifer water source
- **Air quality:** General relationship of air quality to use

Chapter 4 Alternatives Including the Proposed Action

4.1 Introduction

A neighborhood plan is a guide to the future use of property by defining a range of allowable uses or by promoting a particular land use theme. It cannot, however, accurately predict the ultimate build-out of the property in terms of specific uses, density, or timing of development. Neighborhood plans can be particularly useful by offering some assurance of what will **not** be permitted for development. The range of possible development scenarios on Section 36 is nearly infinite if an assumption is made that all options are available for consideration. That assumption is not reasonable since the existing plan for the property already narrows the scope of realistic alternatives. It would be of no value to consider a plan alternative that would be "dead on arrival" based upon known public attitudes or other factors concerning the property. To help narrow the range of possible alternatives and to start from a reasonable basis, the adopted Section 36 Neighborhood Plan will serve as the baseline for comparison of alternatives.

The type and extent of effects to certain components of the human or physical environment with each land use alternative can be clearly defined. For example, if agricultural land is converted to developed uses, it can be assumed that the agricultural utility of the property will be lost. Similar associations can be drawn relative to such resources as soils, wildlife, and vegetation. It is understood that conversion of Section 36 to more intensive uses will have gradual and lasting effects on these particular resources. However, it is clearly evident that the relative effects on these resources may be minimal from both a local and regional perspective.

The relationship of developing a plan over an anticipated 40 year period relative to other issues is less clear for a number of reasons. The foremost reason is that a land use plan cannot adequately predict the timing and type of development. As a consequence, any plan alternative could have an infinite number of development combinations. An approach to help understand a range of possible effects associated with development, four development scenarios were devised and analyzed for cause/effect relationships, as described in Section 2.3.1 of this DEIS. These scenarios are representative of how Section 36 could develop over a period of 20 years under differing assumptions of uses, density, location, and timing of development. It should be noted that it would be unrealistic to consider what might happen over a longer period of time since the cause/effect analyses must also attempt to consider development plans in the surrounding area, which also cannot be predicted. **So as a result, several of the scenarios tend to compress an anticipated 40 year build-out scenario to 20 years, which would mimic a rapid and perhaps unrealistic development schedule but the analysis remains useful for assessing cause/affect relationships.** Based upon the scope of identified public issues, the effects of development were particularly focused on such variables as (1) traffic, (2) city utility services, (3) water, and (4) economics.

4.2 Predicted Attainment of the Project Objectives of all Alternatives

4.2.1 Predicted Attainment of Project Objective to "Develop Section 36 so that the lands are placed to their highest and best use and thereby derive greater revenue for the support of the common school trusts consistent with Section 77-1-601, MCA"

4.2.1.1 Alternative A: No Action

The revenue objective as stated above will not be achieved by this Alternative. The No Action alternative assumes that agriculture will remain the primary use of the property. Under current conditions, agricultural leasing is not likely to generate more than $40 per acre. Based upon a commercial lease proposal already received by DNRC for property within Section 36, up to $4,356.00 per acre [for unimproved lease property] may be a realistic estimate of the value of the property if used for commercial purposes. Alternative A would not achieve this objective.

4.2.1.2 Alternative B: Section 36 Neighborhood Plan

This alternative will achieve the revenue objectives for the school trust. Alternative B provides an opportunity to capture a range of alternative development opportunities. Although it may not represent the greatest potential to capture the maximum amount of revenue, it provides a reasonable long-term development pattern that ensures future compatibility of uses and planned extension of utilities and other infrastructure.

4.2.1.3 Alternative C: Section 36 Neighborhood Plan: Modified Commercial

Revenue opportunities to the school trust will be achieved with this alternative. A change of emphasis from "Retail" to High Tech" as proposed by this alternative should not significantly affect the revenue stream from the property. There may be some delay in achieving a maximum revenue stream compared to Alternative B if "High Tech" is less successful in getting established as compared to retail opportunities.

4.2.1.4 Alternative D: Section 36 Neighborhood Plan: Modified Professional & Residential

Revenue opportunities to the school trust will be achieved with this alternative. Opportunity for a more accelerated revenue stream may be possible with early phase construction of schools and an office campus and increased opportunities for development of single family dwellings, if a timely land exchange can be attained.

4.2.1.5 Alternative E: Section 36 Neighborhood Plan: Traditional Zoning

Revenue opportunities to the school trust will be achieved with this alternative. Application of traditional zoning to each of the identified land use PODS would permit a greater level of flexibility relative to the range of permitted uses, design and density allowances. Excluded uses under the provisions of the other alternatives but permitted by this alternative would represent additional revenue opportunities and capture a market demand that may be absent under the other alternatives.

4.2.2 Predicted Attainment of Project Objective to "Prepare a general MEPA review of the adopted plan to identify and appropriately address related environmental impacts"

4.2.2.1 Alternative A: No Action

This status quo alternative is useful for defining a reasonable alternative to the adopted Section 36 Neighborhood Plan and allows for a comparison of effects between alternatives.

4.2.2.2 Alternative B: Section 36 Neighborhood Plan

This alternative is the baseline for comparison of alternatives. Cause/effect relationships of uses to identified issues are appropriate mechanisms to evaluate the general concept of the plan.

4.2.2.3 Alternatives C, D and E:

Each of these alternatives is a product of the MEPA scoping process and will be evaluated by an effects analysis.

4.2.3 Predicted Attainment of Project Objective "To integrate into the broader MEPA evaluation, whenever practical, more detailed analyses of specific proposals for the property"

4.2.3.1 Alternative A: No Action

This objective is not met by the No Action Alternative.

4.2.3.2 Alternatives B, C, D and E

The development scenarios attempted to integrate into the impact analysis specific proposals related to a Tech Park and public schools. Other development themes were created with a combination of uses that may occur within the provisions of this alternative.

4.2.4 Predicted Attainment of Project Objective to "satisfy MEPA requirements for a specific land use proposal involving a proposed lease that would permit development of a business and technology park"

Except for the No Action Alternative (A), all proposed alternatives include a technical evaluation of a business and technology park. Part B of this DEIS has specific reference to the Tech Park evaluation.

4.2.5 Predicted Attainment of Project Objective to "link proposed actions on Section 36 to a local government decision-making process"

Alternative A would have no relationship to this objective since no actions are proposed. Each of the other alternatives assumes the City of Kalispell will have review authority relative to matters of annexation, subdivision, and zoning.

4.2.6 Predicted Attainment of Project Objective to "simplify subsequent review of projects"

This objective has no application to Alternative A. Under each of the other alternatives, each proposed project would remain subject to a MEPA analysis. Subsequent project MEPA analyses can tier, whenever

practical, to the findings, analysis, and conclusions of this DEIS to help narrow the range of analysis. It is the intent of that this MEPA analysis of alternative land use scenarios will result in the selection of a range of permissible land uses for the entire section. This will simplify future MEPA alternative analysis of site-specific project proposals. Once a range of permissible land uses is defined through the alternative analysis conducted in this MEPA document, the Department will rely upon it to define the scope of land uses available for selection through a competitive bidding process. The Department will engage in the bidding procedure established in 4.3.1.1 and select a project proposal. The Department would then conduct a MEPA analysis of the project and the no-action alternative. An important role of the individual project MEPA analyses is to identify applicable mitigation needs and to assign proportional responsibility [back to the individual project] in the context of the overall build-out possibilities for the selected plan.

4.2.7 Predicted Attainment of Project Objective to "use the plan as a guide to the future use of the property including creating the basis for implementation strategies associated with zoning, annexation, subdivision review, plan amendments, and extension of services"

Under Alternative A, the adopted Section 36 Plan would have no application. For each of the other alternatives, decisions by DNRC and local governments concerning future development proposals on Section 36 would be guided by the selected alternative.

4.3 Predicted Effects on Relevant Affected Resources of all Alternatives

Development of Section 36 will trigger a variety of effects. The degree and scope of effects of development can be influenced by such parameters as the type, location, and rate of development. An analysis was performed to quantify a range of potential impacts related to effects on traffic, water supply, sewage collection, hydrology, and economics. Since there is no way of accurately predicting how the property may ultimately develop under any given plan alternative, the analysis focused on identifying events that would trigger certain mitigation thresholds or alternatively, defining development strategies to avoid the triggering of certain adverse effects.

4.3.1 Land Use

4.3.1.1 Effects Common to All Alternatives

Regardless of the chosen alternative, several land use attributes will remain constant with Section 36. Each is discussed below.

Sport Fields Complex

The infill of the sport fields' complex with additional fields in the SE ¼ is dependent on available funding from various sports organizations and other sources. The current status of built fields is shown in Section 2.3.1. Also identified in the tables of Section 2.3.1 is a list of facilities that would be constructed within the next 20 years. The build-out of the complex was previously evaluated under a MEPA process and will not be affected by any of the action alternatives. If the lease is terminated for any reason and the sports complex is abandoned, a subsequent planning process involving an amendment to the Section 36 Neighborhood Plan will determine the appropriate use for the affected area.

BPA Power Lines

When the Bonneville Power Administration constructed the power lines across the State of Montana, notice was sent to the DNRC notifying them of the sections of state school trust lands that would be encumbered. Research of past documents reflect acknowledgement of the lines. However, the right-of-way was not perfected and the school trusts were not compensated.

The BPA power corridor bisects Section 36 from the SE corner through the NE corner. The height clearance [of the lines] prevents all but agricultural activities under the lines. BPA requires a 250' easement width. DNRC has estimated the length of the corridor through Section 36 at 6,257'. The estimated total acreage encumbered is 35.83 acres. The easement area bisects all three pods; mixed commercial, mixed professional, and mixed residential. The land values vary within each pod. Assuming a land value of $1.00 /sq. foot, the easement could cost BPA $1,524,600.00. Additionally, the height of the lines impacts the highest and best use of the underlying surface area. BPA can avoid additional compensation for damages by raising the height of the lines at an estimated cost of $800,000. The cost of the actual damages assessed would exceed mitigating the damages by elevating the lines.

Highway 93 By-Pass

The future use of Section 36 is being significantly affected by a proposed highway alignment through Section 36. All land use options for the property have "designed-around" the proposed alignment. The Montana Department of Transportation (MDT) has not purchased an easement for the alignment. DNRC will initiate a process with MDT to seek compensation for the proposed alignment. MDT has identified the easement width of 110' and 7,684 feet in length for a total of 19.4 acres. Assuming an appraised value of $1.00 per square foot, the easement could cost $845,000. Concurrent with that process will be discussions concerning (1) the need to have an internal road crossing of the by-pass to permit access to all divided quadrants of Section 36, (2) a below-ground crossing of the by-pass for pedestrian and bicycle uses, and (3) inadequate height clearance of the BPA power lines to accommodate the proposed crossing of the highway below the lines. MDT and DNRC cooperatively exchange properties for easements. DNRC would entertain an option with MDT to acquire the 20 acres within Section 36 that is privately owned for values associated with the highway proposed easement needs within Section 36. For the purposes of this analysis, it is expected that the by-pass will be constructed sometime after year 2020.

DNRC Offices

The offices of the Northwestern Land Office and Kalispell Unit of the DNRC are currently located on a 15-acre site in the SE ¼. DNRC discovered that only 4 acres of this site has been purchased as an easement for this purpose. DNRC will need to evaluate options for pursuing rights to the additional 11 acres and this could lead to discussions of whether the DNRC offices are the highest and best use of the property and how DNRC can afford to compensate the trust for the added acreage. The DNRC office area is located within the city limits of Kalispell and zoned Public P-1. This area would remain available for government office buildings, including expansion and routine maintenance of the existing buildings. Any change of use for the property will be subject to a MEPA analysis and City review if a zone change is recommended to accommodate any other type of use.

Reclassification of State School Trust Lands

Except for the leased tract and the SE ¼ of Section 36, most of the property is classified for production of crops, commonly referred to as Class 3 Lands. Section 36 has been managed for agricultural purposes since at least 1912. The location of the property adjacent to the City limits of Kalispell, proximity to city services, expansion of development in the vicinity, and recent development interests implies the property should be considered for other uses.

The existing agricultural lease contains special provisions to facilitate reclassification of portions of the property to a Class 4 designation. This EIS will provide the necessary information required for the completion of a capability inventory at the time of reclassification. Reclassification will occur as land use conversion occurs.

Selection of Specific Project Proposals

Selection and development of specific project proposals for Section 36 will follow a defined pattern of review and evaluation. Under Alternatives B-E, annexation into the city of Kalispell will be pursued. The process to select a specific use for the property will be initiated by DNRC with the issuance of a Special Lease Proposal (SLP) to seek competitive proposals. A series of review mechanisms will determine whether a proposed use is acceptable. The language of the SLP will establish criteria to test the financial feasibility and capabilities of a developer to perform. [Refer to Part B of this DEIS for further discussion of the SLP process). The selected neighborhood plan (Alternatives A-E) will establish the general allowances for the property. Zoning will be adopted to implement the neighborhood plan and the proposed use must be consistent with adopted zoning. If the use selected via the SLP process satisfies the tests of the plan and zoning, the next step will be review of the proposed use through subdivision review (if the use will occupy a "new" lease lot). Subdivision approval will stipulate conditions of approval for development of the property and identify appropriate mitigation measures related to such issues as transportation and water and sewer service. Following or concurrent with city review of the project, a MEPA analysis will be done to further evaluate the proposal. This EIS will be used to help assign the share of appropriate on- and off-site improvements to that particular project. The project selection process will be concluded with the signing of a lease agreement with the project proposer, which will include reiteration of city conditions of approval and various provisions to secure the general interest of the State, including performance bonding of the development.

4.3.1.2 General Land Use Themes by Alternative

Alternative A – No Action

Under this alternative, land use would not change substantially. DNRC would continue to seek agricultural leasing on all but the SE ¼ of Section 36. This action alternative would not preclude the future construction of the Highway 93 By-Pass, continued in-fill of the Sport Fields complex, or use of the DNRC office area. Resolution of the BPA easement and compensation issue would continue to be pursued. Any opportunity to allow for a redesign of the power infrastructure would be encouraged if it served to elevate the lines and combine the two circuits onto a single pole structure.

Alternative B – Section 36 Neighborhood Plan

This alternative would permit a wide range of land use opportunities on Section 36. It would seek to separate uses based on such factors as compatibility and geographic location. Over an extended period of time, estimated to be 30 to 50 years, agriculture activities could be replaced in entirety by developed urban uses. Retail commercial uses would be restricted to an area in the NE ¼ situated between the proposed highway by-pass and Highway 93. This location would also be acceptable for technology businesses. A professional office and school POD would develop south of West Reserve Drive and north of the proposed highway by-pass. High density residential would develop in an area primarily located in the SW ¼ of Section 36. Phasing of development would occur to minimize a scattered development pattern and to provide for the logical extension of services. Zoning would be adopted to implement the goals and policies of the plan as per the proposed MP-1 zoning text included within the Section 36 Initial Proposal and Scoping document.

Alternative C – Section 36 Neighborhood Plan: Modified Commercial

Development under this alternative would still result in the gradual but ultimate elimination of most agricultural uses over an extended period of time. In contrast to Alternative B, this alternative would promote technology uses over retail commercial uses. If technology development is successful, any retail commercial uses would probably serve the interests of the local employment base as opposed to the general retail needs of a regional economy. The proposed zoning text of Alternative B would need to be modified accordingly.

Alternative D – Section 36 Neighborhood Plan: Modified professional & Residential

Development of Section 36 under this alternative would modify alternative B by encouraging the location of schools and office campus' near Stillwater Road in the early phases of development. Secondly, this alternative would seek to promote single-family uses in the SW ¼ over high density residential consisting primarily of apartments. These two objectives would require elimination of the "Deferred Development" designation and participation in a land exchange for the SW¼. The proposed zoning text of Alternative B would need to be modified accordingly.

Alternative E – Section 36 Neighborhood Plan: Traditional Zoning

The four proposed land use pods of Alternative B can be implemented using existing zoning classifications from the Kalispell Zoning Ordinance. The proposed zoning text of Alternative B would not be utilized.

A B-5 Industrial-Commercial zoning designation for the Mixed Commercial POD would allow substantially more land use opportunities than anticipated with the proposed zoning for Alternative B. B-5 zoning would permit or conditionally permit 140 uses as compared to 19 uses as proposed in Alternative B. This additional allowance of uses may improve opportunities for development in the Mixed Commercial POD and accelerated build-out of the POD. Lost would be the various phasing and performance standards of the proposed zoning.

An R-5 Residential/Professional Office zoning designation for the Mixed Professional POD would eliminate some opportunities for neighborhood convenience retail but is similar to the proposed zoning in other aspects of land use allowances. Lost would be the various phasing and performance standards of the proposed zoning.

An RA-3 Residential Apartment zoning designation for the Mixed residential POD would expand the use allowances within the POD as compared to the zoning proposed by Alternative B. Examples of expanded uses would include banking and medical facilities. Density allowance would be similar but lost would be the various phasing and performance standards of the proposed zoning.

4.3.2 Roads and Traffic

Development of Section 36 under Alternatives B, C, D, and E will require both on and off-site improvements to mitigate traffic-related effects. All roads interior to the property will be phased in as development occurs. Lessees will be responsible for construction of all the required road segments and DNRC will dedicate the completed roads to the City of Kalispell. Offsite improvements will be identified concurrent with individual project proposals and the associated mitigation improvements will be borne by the lessee.

DNRC, as any other applicant for annexation or subdivision review, will be required to dedicate exterior and interior roads to the appropriate city or county government. This will perfect easements for West Reserve Drive, Stillwater Road, and Four Mile Drive, which currently exist without authorization from DNRC.

The following sections discuss the effects of development on "roads". The basis for the analysis is 3 distinct land use scenarios plus a no action scenario. The listed scenarios are not alternatives, but development scenarios to help define a range of possible effects from development of Section 36. The identified cause/effect relationships help to bracket and define acceptable mitigation packages and offer choices for the selection of alternatives.

The effects of construction of the highway by-pass was not considered in the 20 year build-out analysis. If constructed now or in the future, it would have a significant influence on local traffic patterns and would probably benefit the future development of Section 36. However, due to the current design considerations of the by pass and its intersection with West Reserve Drive and U.S. Highway 93, it is likely to force more traffic to the interior of Section 36. It is likely that the portion of West Reserve Street north of Section 36 would no longer intersect Highway 93. The portion of West Reserve between Highway 93 and intersection #1 (see Figure 18) would be modified to provide local access only to developments that are connected to this route.

After the bypass is constructed traffic traveling east and west on West Reserve would be rerouted to the south at intersection #1 to the bypass intersection between intersections #5 and #6. It is also likely that much of this traffic would continue through Section 36 to intersect Highway 93 at intersection #3. The majority of the eastbound traffic would turn south onto Highway 93 without creating any major capacity problems at intersection #3. Traffic wishing to travel west on West Reserve would also have to travel through Section 36. Northbound traffic on Highway 93 would likely turn left at intersection #2 or at the 93/Bypass intersection. The vehicles that turn at intersection #2 will travel on the internal road system from intersection #2 to #6, then cross the Bypass and proceed to West Reserve at intersection #1. The traffic that turns west through Section 36 using intersection #2 will travel to intersection #6, then turn north to intersection #1. The resulting increase in traffic volumes on these internal routes will tend to decrease the performance of the intersections and make it more difficult to turn onto and off of these collector routes.

4.3.2.1 Level of Service Analysis

The quality of travel and function of urban and suburban roadways is typically controlled by the operation of the major intersections. The accepted method of evaluating intersections is the Level of Service analysis. A level of service (LOS) analysis of the existing conditions was conducted at the two signalized intersections on U.S. Highway 93 at West Reserve and Grand View. LOS represents the range of operating conditions for different types of facilities and is based on the ability to accommodate varying amounts of traffic. These levels are given letter designations from A to F, whereby LOS A represents the best operating conditions and LOS F the worst or saturated flow conditions. LOS A through C are considered acceptable operation, LOS D is marginal but still functional, and LOS E and F indicate system failure and are obviously undesirable. The LOS analysis is intended to determine how well an intersection is functioning with respect to variables such as traffic flow, intersection geometrics, and other prevailing conditions. The LOS evaluation was conducted according to the procedures outlined in the Transportation Research Board's ***Highway Capacity Manual (HCM) - Special Report 209*** and the ***Highway Capacity Software*** (HCS) for signalized intersections.

The LOS analysis was performed using field data collected in August of 1999 for the West Reserve Street/U.S. 93 intersection. Data for the Grand View/U.S. 93 and the West Reserve/Stillwater intersections were collected in March of 2001 and factored to represent summer conditions when the peak traffic demand occurs in the Flathead Valley. The data collected included turning movement volumes, intersection geometrics, roadside environment, and signal operation. The results of this analysis indicate that the intersection of U.S. 93 and West Reserve Drive is currently providing LOS B during the AM and PM peak hours. The U.S. 93/Grand View intersection is currently providing a LOS of A during the AM and PM Peak hours.

Similar Studies were also performed for the unsignalized intersection of West Reserve Drive/Stillwater Road. This was done using similar techniques to those used for the signalized intersections. The unsignalized intersection analysis assumes that the through traffic flow on the major road at the intersection is operating at LOS A. The focus of the unsignalized analysis is on the turning movements that must deal with opposing traffic such as left turns, right turns and through movements from the side road and left turns from the main road. The results of the analysis at West Reserve and Stillwater indicated that the intersection is currently functioning at LOS B during the AM and PM peak hours.

Using the existing traffic conditions and the likely traffic generation from the committed developments in the area, a future year LOS analysis was performed for the intersections in the area of Section 36. LOS was calculated for 2005, 2010, and 2020. Future year baseline traffic volumes were estimated using historic traffic volume information obtained from MDT. The historic growth trends in traffic volumes were used to estimate summer traffic volumes for the future year analyses. The traffic generated from the committed developments was then added to these future year projections to yield the existing plus committed (E+C) traffic volumes that were used in the analysis. This information is shown in Table 4.1. Included in this LOS summary is an analysis of the proposed signalized intersection at the main entrance to the Crosswell Mountain View Plaza and Highway 93. (DNRC will share this intersection with development of the NE ¼ of Section 36.)

Table 4.1 LOS Summary

	Existing (2000)		2005 (E+C)		2010 (E+C)		2020 (E+C)	
Intersection	AM	PM	AM	PM	AM	PM	AM	PM
Reserve & 93	B	B	B	B	B	C	B	C
Crosswell Mountain View Plaza Entrance & 93	NA	NA	A	B	A	B	A	B
Grand View & 93	A	A	A	B	A	C	A	D (B*)
Reserve & Stillwater	A/B	A/B	A/B	A/B	A/B	A/B	A/B	A/B
Four-Mile and Stillwater	A	A	A	A	A	A	A	A

*Possible LOS with the additions of an actuated left turn phase for northbound traffic.

Table 4.1 indicates that the LOS is not likely to change much in the future years as a result of the committed developments. The only intersection that may have a problem is the intersection of Grand View Drive and U.S. 93. This intersection may need the installation of an actuated left turn phase for northbound traffic by the year 2020. However, it should be noted that the LOS for this intersection was calculated for peak traffic generation of the ball fields and that most of the left turn traffic at the intersection was associated with ball field activity. Since the fields and special use facilities only generate traffic for short periods of time and on particular days of the week, this intersection is expected to function at an acceptable LOS most of the time.

4.3.2.2 Growth Scenarios

Four development scenarios are considered for evaluation as presented in Section 2.3.1. In Scenarios 2, 3 and 4, the DNRC is considering a potential development pattern that would include a variety of different land use types in the four quadrants of the section. Construction is anticipated in several phases during the next 20 years. The analysis examines the phased development in the years 2005, 2010, and 2020. These land use types include office parks, business parks, restaurants, technology parks, schools, recreation facilities, medical and dental offices, shopping centers, grocery stores, convenience stores, recreation facilities, residential apartments, elderly housing developments, and other business and retail developments.

4.3.2.3 Trip Generation and Assignment

For this analysis, the nationally accepted trip generation rates contained in the sixth edition *Trip Generation* manual by the Institute of Transportation Engineers were used. For the purposes of this analysis a vehicle trip is defined as any trip that either begins or ends at the proposed development site. The analysis involves establishing the number of trips that are generated by the site under the current conditions and with the proposed development. Due to the general location of the proposed development site to the City of Kalispell it was determined that the critical traffic impacts on the intersections and roadways would most likely occur on weekdays during the morning and evening peak hours of traffic use on the adjacent roadways.

Trip generation for sports fields is considerably different than other types of land-use. Because of their recreational function they often have very unique trip generating times and levels of use. The trip generation rates for the ball fields were calculated using information gathered from the Kalispell Parks & Recreation Department. The calculations assume that the worst case condition for use of the ball fields would occur during the PM peak traffic hours. The ball fields are used for games in the spring of each year. Games occur on weeknights and begin between 5:30 and 6:00. Normally 80% of the fields are in use at any one time. The athletic fields are only used during the spring, summer, and fall seasons.

The trip generation rates for the various land-uses proposed for this site were obtained from the *Trip Generation* manual. **Tables 4.2, 4.3, & 4.4** show the trip generation rates and totals for each phase of the development for the three development scenarios.

Table 4.2 Scenario 2 - Trip Generation Rates

Project Phase	Development Pod	AM Peak Hour Trips	PM Peak Hour Trips	Total Weekday Trips
0-5 Years	NE – Mixed Commercial	225	277	2,348
	NW – Mixed Professional	701	235	2,762
	SW – Mixed Residential	0	0	0
	SE – Sports Fields	0	475	NA
5-10 Years	NE – Mixed Commercial	434	511	4,417
	NW – Mixed Professional	599	722	8,190
	SW – Mixed Residential	225	128	1,275
	SE – Sports Fields	0	0	NA
10-20 Years	NE – Mixed Commercial	445	581	5,087
	NW – Mixed Professional	648	762	2,105
	SW – Mixed Residential	293	430	3,936
	SE – Sports Fields	0	0	NA
Total		**3,570**	**4,121**	**30,120**

Table 4.2 shows that in Scenario 2 the proposed development would result in approximately 3,570 trips during the weekday AM peak hour and 4,121 trips in the PM peak hour.

Table 4.3 Scenario 3 - Trip Generation Rates

Project Phase	Development Pod	AM Peak Hour Trips	PM Peak Hour Trips	Total Weekday Trips
0-5 Years	NE – Mixed Commercial	338	317	2,319
	NW – Mixed Professional	701	236	2,762
	SW – Mixed Residential	0	0	0
	SE – Sports Fields	0	475	NA
5-10 Years	NE – Mixed Commercial	396	396	3,514
	NW – Mixed Professional	549	761	8,585
	SW – Mixed Residential	225	128	1,275
	SE – Sports Fields	0	0	NA
10-20 Years	NE – Mixed Commercial	886	1443	13,955
	NW – Mixed Professional	1,072	986	4,454
	SW – Mixed Residential	482	594	5,147
	SE – Sports Fields	0	0	NA
Total		**4,721**	**4,931**	**42,451**

Table 4.3 shows that in Scenario 3 the proposed development would result in approximately 4,721 trips during the weekday AM peak hour and 4,931 trips in the PM peak hour.

Table 4.4 Scenario 4 - Trip Generation Rates

Project Phase	Development Pod	AM Peak Hour Trips	PM Peak Hour Trips	Total Weekday Trips
0-5 Years	NE – Mixed Commercial	574	1,078	10,612
	NW – Mixed Professional	784	320	3,627
	SW – Mixed Residential	76	93	995
	SE – Sports Fields	0	475	NA
5-10 Years	NE – Mixed Commercial	141	361	3,643
	NW – Mixed Professional	1,006	1,305	9,675
	SW – Mixed Residential	601	680	6,788
	SE – Sports Fields	0	0	NA
10-20 Years	NE – Mixed Commercial	764	1,552	17,732
	NW – Mixed Professional	1,441	1,378	7,140
	SW – Mixed Residential	421	565	5,333
	SE – Sports Fields	0	0	NA
Total		**5,874**	**7,397**	**65,985**

Table 4.4 shows that the new site development proposed in Scenario 4 would result in approximately 5,874 trips during the weekday A.M. peak hour and 7,397 trips in the P.M. hour.

4.3.2.4 Trip Distribution

There are eight general routes that visitors can travel to and from the site, from the south and north on U.S. 93 and Stillwater Road and from the east and west on West Reserve Drive and Four-Mile Drive. Because of the close proximity of the City of Kalispell, it is estimated that the majority of the trips will occur to and from the south on Highway 93. Moderate percentages of trips will occur to and from the east on West Reserve, north on U.S. 93, and south on Stillwater. It was estimated that the smallest percentage of traffic will travel to and from the site from the north on Stillwater Road, west on West Reserve, and east and west on Four-Mile Drive. The trips to and from the north on Stillwater and east on Grand View would probably contribute to less than 1% of the total vehicles approaching or leaving the site and were discounted to simplify the analysis process. It was also estimated for all action scenarios, that prior to the year 2005 there would be no substantial number of internal trips. By the year 2010 it is estimated that 10% of all vehicle trips generated by the development will occur within the development. By the year 2020 the amount of internal trips would increase to 20% of all trips. **Figures 9 and 10** show the estimated trip distribution of trips generated within Section 36 for Scenario 1. **Figures 11, 12, and 15** show the trip distributions for Scenarios 2 and 3. **Figures 13, 14, and 15** show the trip distribution for Scenario 4.

FIGURE 9

Estimated Trip Distribution

Scenario 1 (Years 0-10)

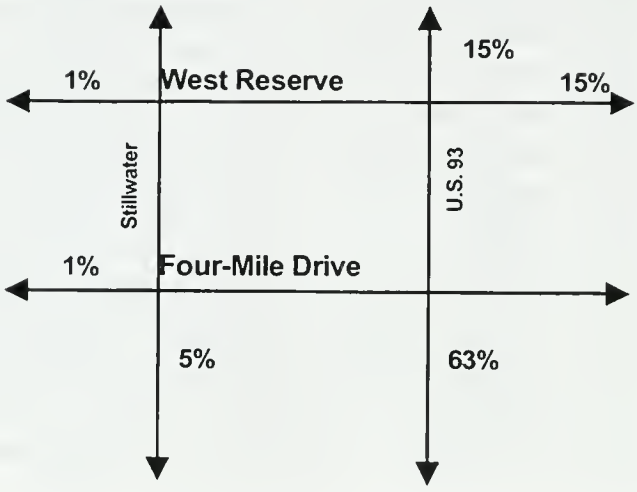


FIGURE 10

Estimated Trip Distribution

Scenario 1 (Years 10-20)

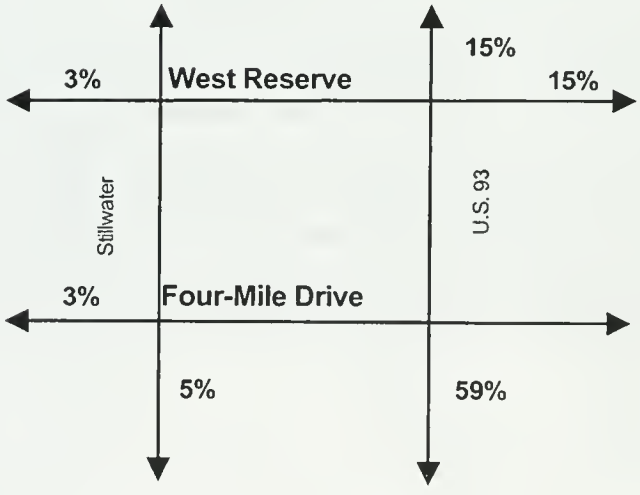


FIGURE 11

Estimated Trip Distribution

Scenarios 2 & 3 (Years 0-5)

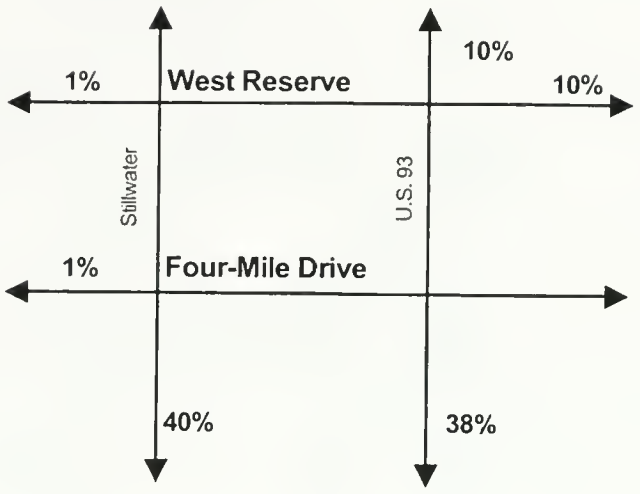


FIGURE 12

Estimated Trip Distribution

Scenarios 2 & 3 (Years 5-10)

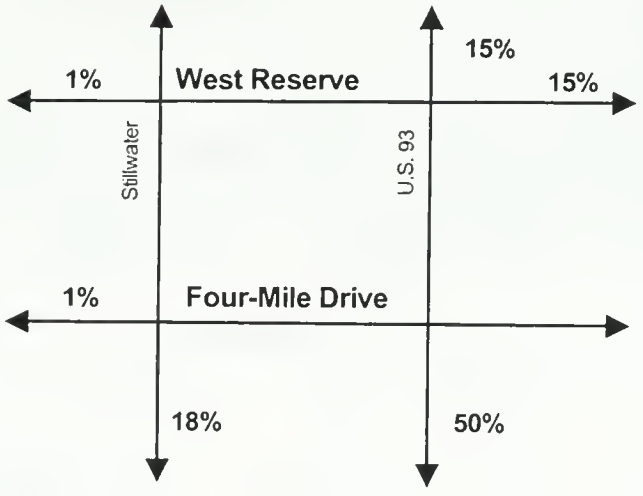


FIGURE 13

Estimated Trip Distribution

Scenario 4 (Years 0-5)

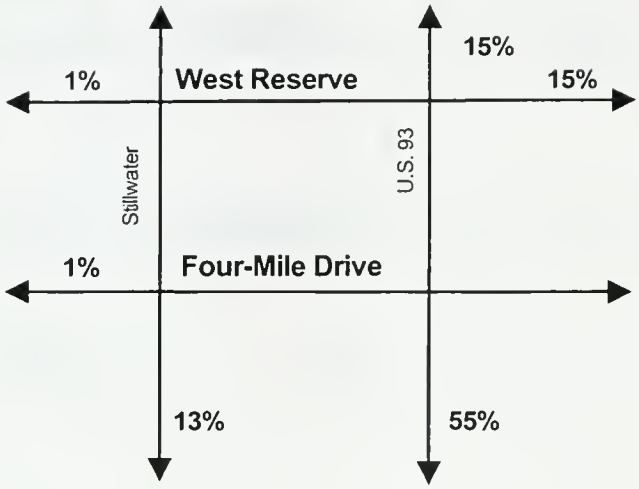


FIGURE 14

Estimated Trip Distribution

Scenario 4 (Years 5-10)

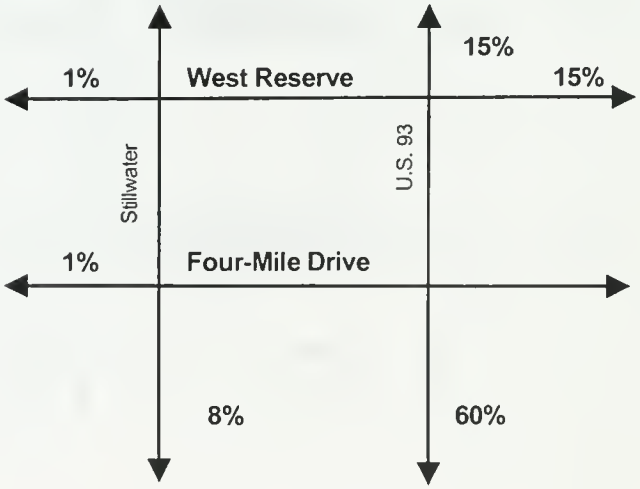
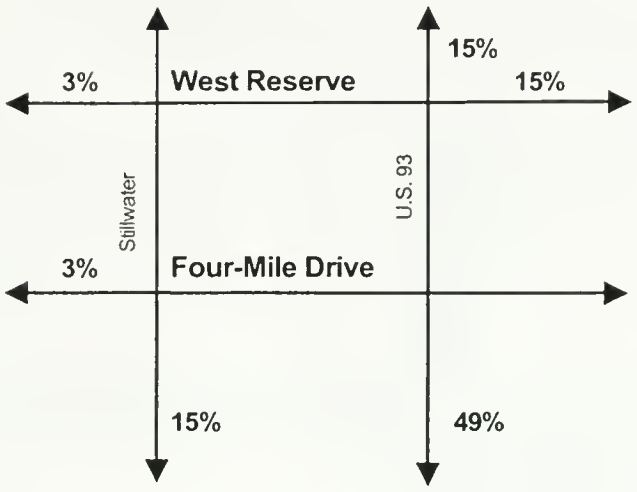


FIGURE 15

Estimated Trip Distribution

Scenarios 2, 3 and 4 (Years 10 -20)



It was assumed that traffic approaching the development would egress the area using the same route used to arrive.

4.3.2.5 Internal Road Network

The internal road network will develop and the land-use changes in each growth scenario. There will be no internal road construction associated with Scenario 1. The internal road development will be similar for Scenarios 2, 3 and 4. It is anticipated that all of the major road development will be in-place by the year 2020 in all action scenarios. There will be no arterial development within Section 36. The major roads will be collector routes that will provide for both the movement of traffic and land access. No attempt was made to forecast the location of the local streets within the proposed development. These local streets will be established based on the actual location of the lots once the lots are formally platted. It is important to note that there will be no road connections that cross the future Bypass alignment until sometime between the year s 2010 and 2020. When this occurs there will be two crossing locations one in the center of the section and one at Four-Mile Drive. **Figures 16, 17, and 18** show the location of the internal collector routes and the traffic volumes under the development scenarios included in Scenarios 2, 3 and 4.

Figure 16
Internal Road Network
Scenarios 2, 3 and 4 (Years 0-5)

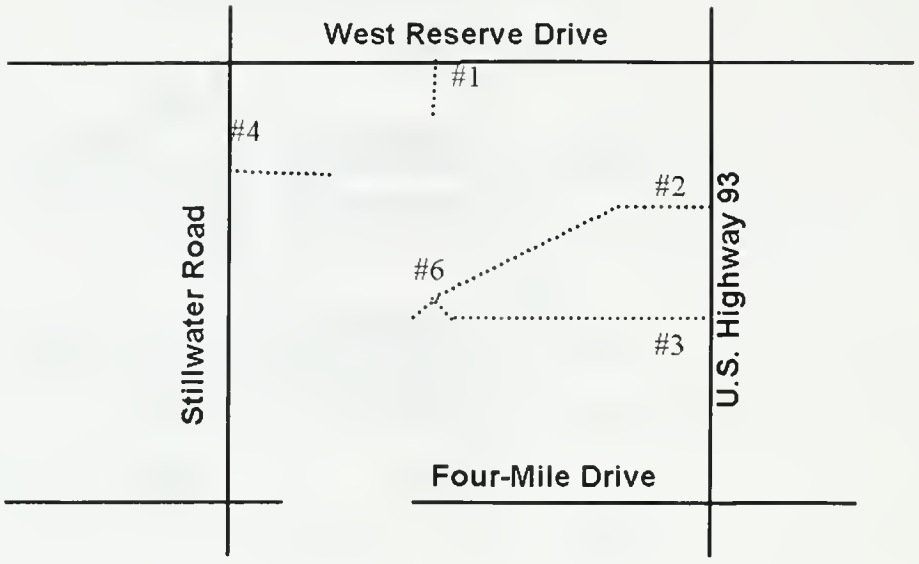


Figure 17
Internal Road Network
Scenarios 2, 3 and 4 (Years 5-10)*

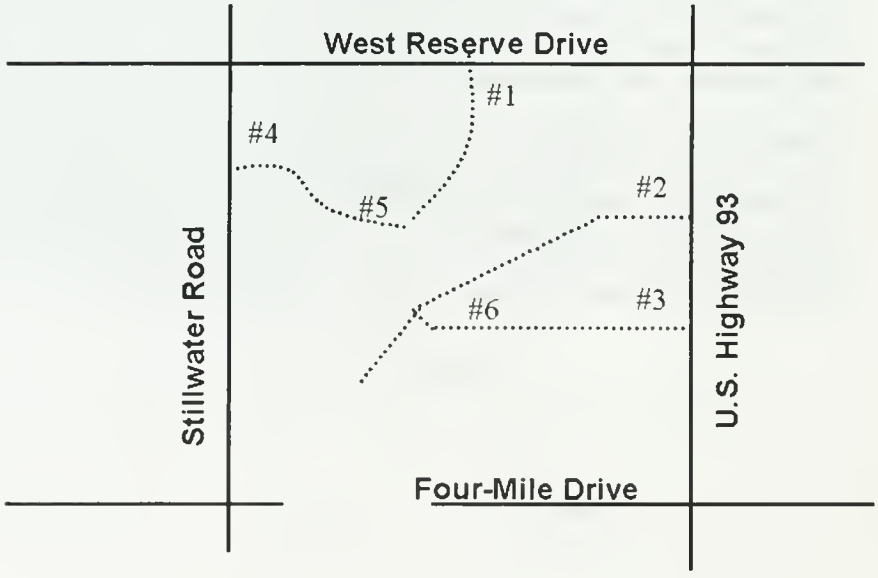
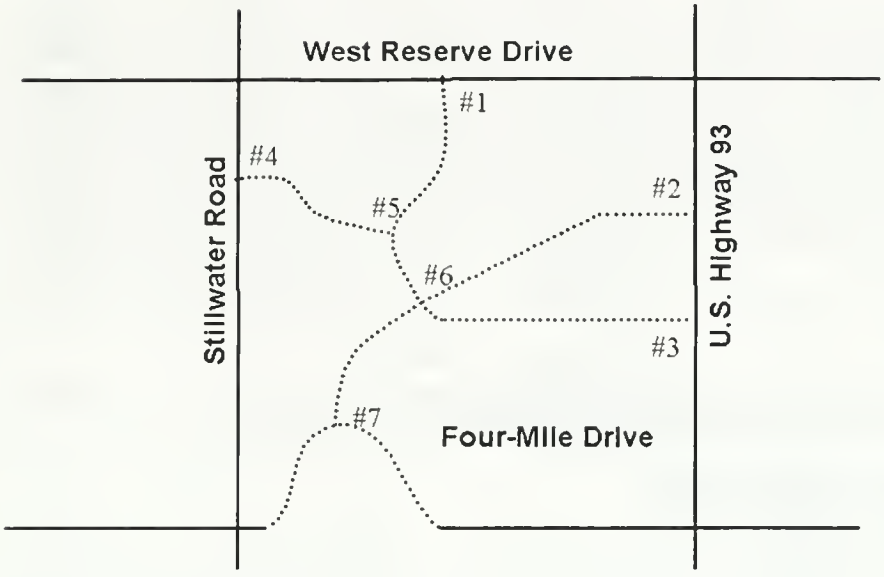


Figure 18
Internal Road Network
Scenarios 2, 3 and 4 (Years 10-20)*



*It is anticipated that all internal collector routes will be installed by the year 2020.

The anticipated form of traffic control has been estimated based on anticipated traffic demand. A summary of the anticipated form of traffic control for each intersection within the study area is presented in **Table 4.5.**

Table 4.5 Anticipated Form of Intersection Traffic Control

	Scenario 2 & 3			Scenario 4		
Intersection*	**0-5 Years**	**5-10 Years**	**10-20 Years**	**0-5 Years**	**5-10 Years**	**10-20 Years**
West Reserve/ U.S. 93	Signal	Signal	Signal	Signal	Signal	Signal
Grand View/ U.S. 93	Signal	Signal	Signal	Signal	Signal	Signal
West Reserve/ Stillwater	STOP North & South app.	STOP North & South app.	STOP North & South app.	STOP North & South app.	STOP North & South app.	STOP North & South app.
Stillwater/ Four-Mile	STOP East & West app.	STOP East & West app.	STOP East & West app.	STOP East & West app.	STOP East & West app.	4-way STOP
#1	STOP South app.	STOP South app.	STOP South app.	STOP South app.	STOP South app.	STOP South app.
#2	**Signal**	**Signal**	**Signal**	**Signal**	**Signal**	**Signal**

	Scenario 2 & 3			Scenario 4		
Intersection*	**0-5 Years**	**5-10 Years**	**10-20 Years**	**0-5 Years**	**5-10 Years**	**10-20 Years**
#3	STOP West app.	STOP West app.	STOP West app.	STOP West app.	STOP West app.	STOP West app.
#4	NA	STOP East app.	STOP East app.	STOP East app.	STOP East app.	STOP East app.
#5	NA	NA	Signal	NA	NA	Signal
#6	NA	STOP East app.	Signal	STOP East app.	STOP East app.	**Signal**
#7	NA	NA.	STOP North app.	NA	NA	STOP North app.

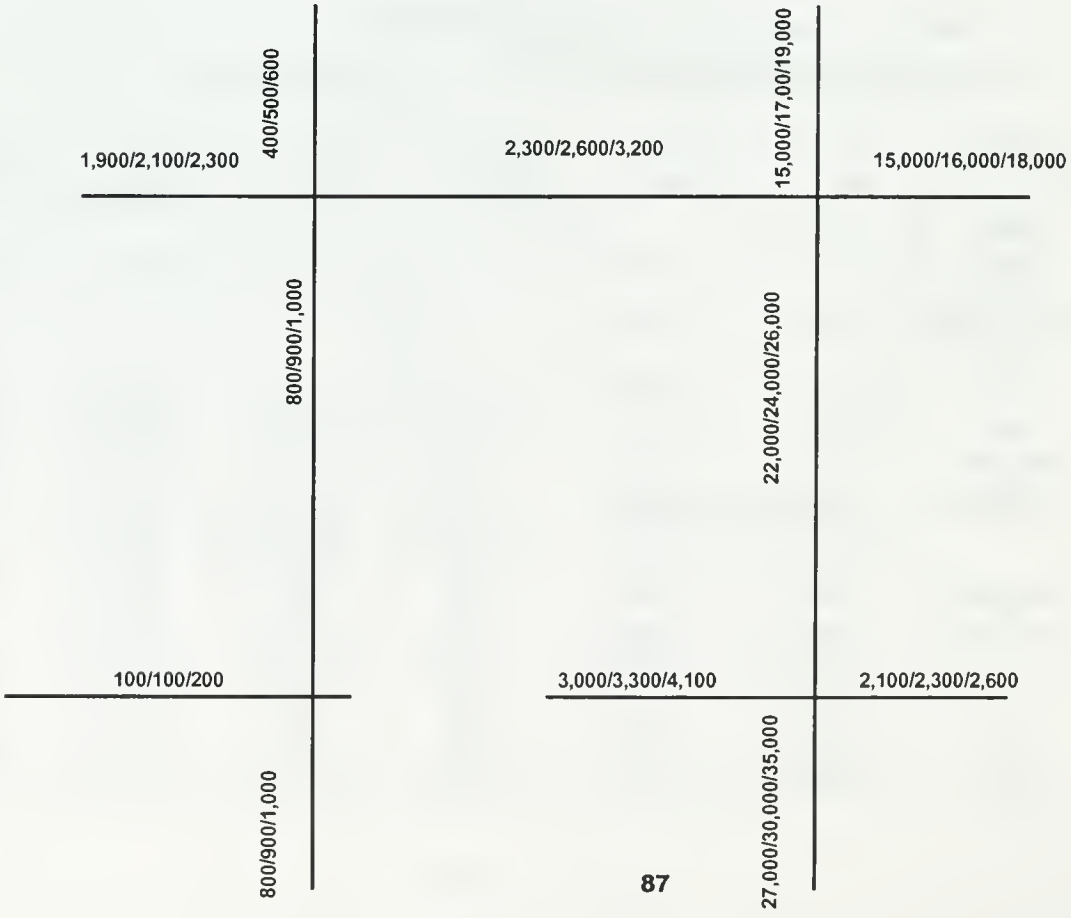
*See FIGURES 16-18 for intersection numbering sequence

4.3.2.6 Traffic Volumes

Scenario 1

The traffic volumes are going to increase in Scenario 1 as a result of growth and development elsewhere in the community. The projected traffic volumes on the adjacent road network are shown in **Figure 19**. The anticipated corridor traffic volume increases would not be great enough to require the enlargement of any of the adjacent roads.

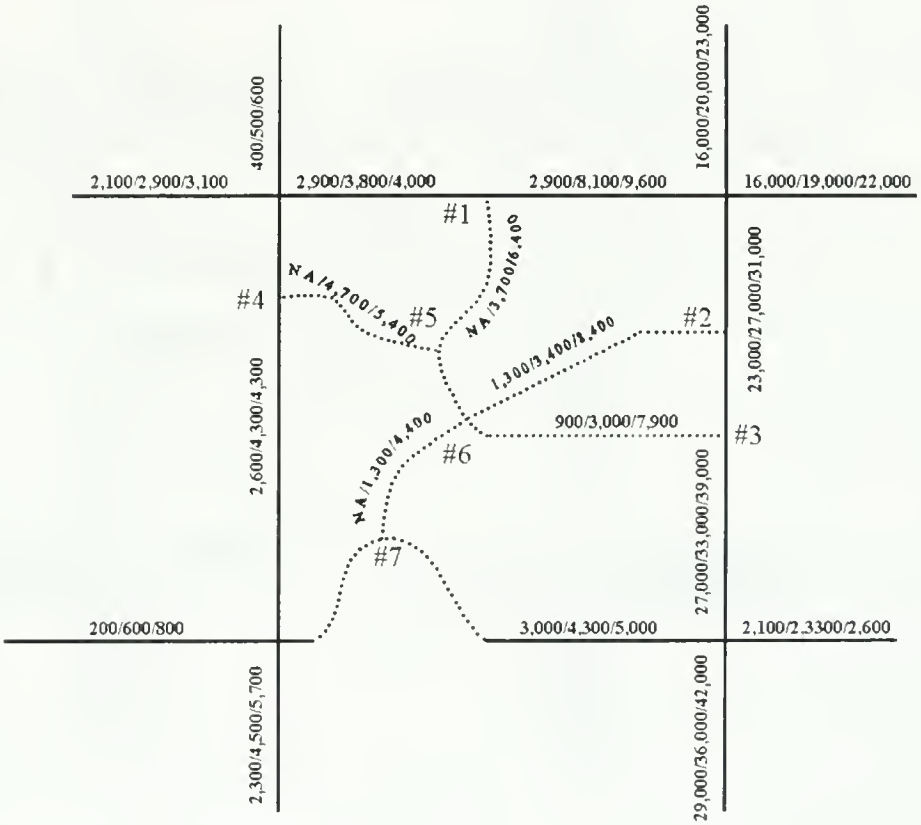
FIGURE 19.Scenario 1. Traffic Volumes, 2005/2010/2020



Scenario 2

Traffic volumes on the adjacent street network would increase in Scenario 2 as a result of the development. The projected traffic volumes that would occur, as a result of Scenario 2, are shown in **Figure 20**. The anticipated corridor traffic volume increases would not be great enough to require the enlargement of any of the adjacent roads. Initially all of the internal roads will function adequately as two-lane corridors. The traffic volume projections indicate that during the period between 2010 and 2020 several segments of the internal road system would have to be expanded to three-lane roads in order to handle the anticipated traffic volumes and mid-block turning movements. These road segments include the segments between intersection #3 and #6 and the segment between # 1 and # 3.

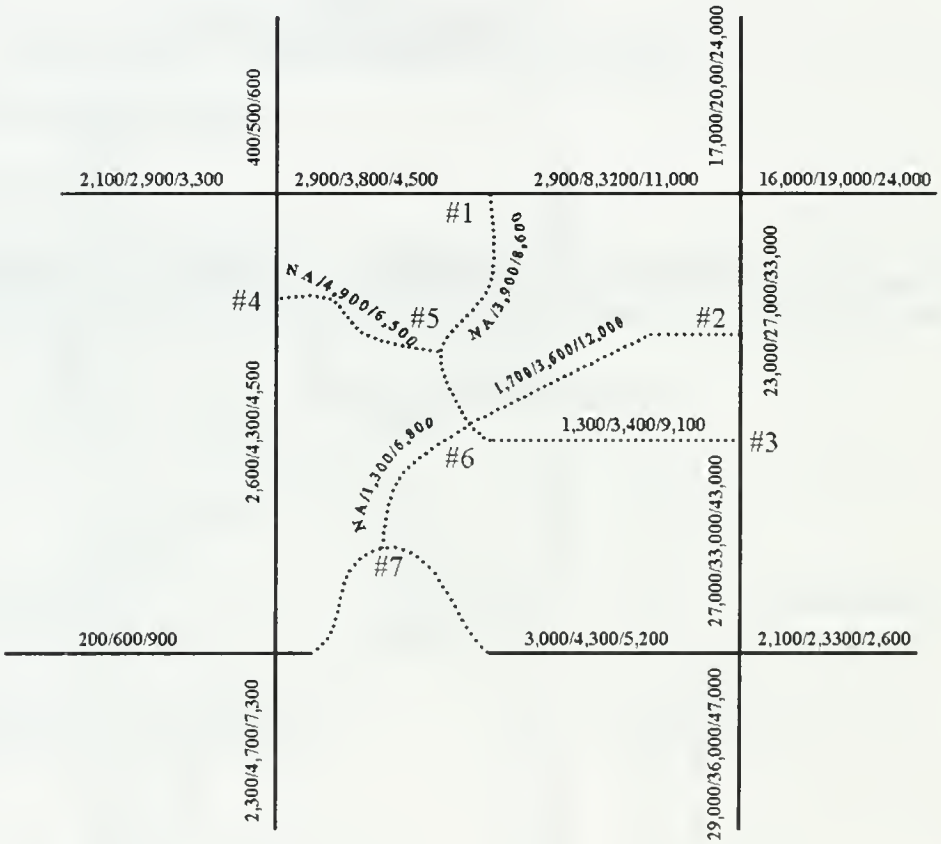
FIGURE 20
Scenario 2 Traffic Volumes
2005/2010/2020



Scenario 3

Traffic volumes on the adjacent street network would increase in Scenario 3 as a result of the development. The projected traffic volumes that would occur, as a result of Scenario 3, are shown in **Figure 21**. The anticipated corridor traffic volume increases would not be great enough to require the enlargement of any of the adjacent roads. Initially all of the internal roads will function adequately as two-lane corridors. The traffic volume projections indicate that during the period between 2010 and 2020 several segments of the internal road system would have to be expanded to three-lane roads in order to handle the anticipated traffic volumes and mid-block turning movements. These road segments include the segments between intersection #3 and #6 and the segment between # 1 and # 3.

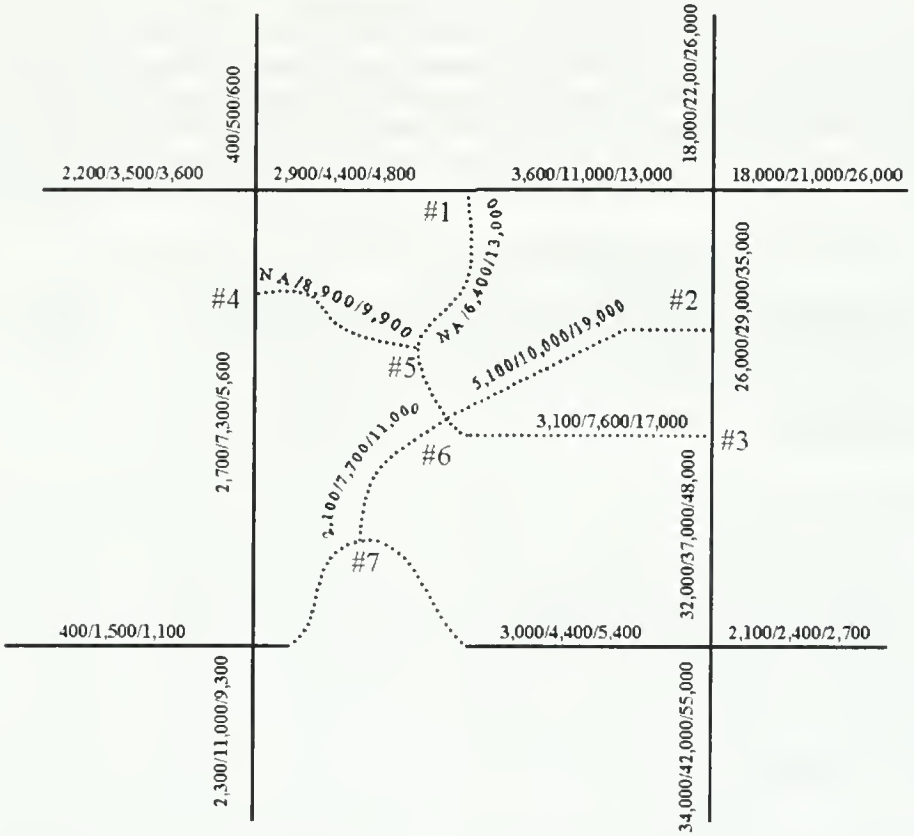
FIGURE 21
Scenario 3 Traffic Volumes
2005/2010/2020



Scenario 4

Traffic volumes on the adjacent street network would increase in Scenario 4 as a result of the development. The projected traffic volumes that would occur, as a result of this scenario, are shown in **Figure 22**. The anticipated corridor traffic volume increases between 2010 and 2020 would be great enough to require the enlargement of West Reserve between 93 and Stillwater. This road segment would have to be enlarged to include an additional westbound traffic lane. All of the internal roads would initially only have to be two-lane roads to handle the anticipated traffic volumes. During the period between 2005 and 2010 several road segments will have to be expanded to three-lane corridors to handle the anticipated traffic. These road segments include the segments between intersection #1 and #3 and the segment between # 2 and # 6. During the period between 2010 and 2020 it is likely that the road segment between #4 and #5 will also have to be expanded to three-lanes.

FIGURE 22
Scenario 4 Traffic Volumes
2005/2010/2020



4.3.2.7 Intersection Operation

Scenario 1

There will be no traffic impacts resulting from Scenario 1. Traffic volumes on the adjacent roadways and the LOS of the intersections will not be affected. The LOS that will occur with Scenario 1 is the same as what was presented in **Table 4.6**, earlier in this report. The information contained in **Table 4.6** indicates that the only intersection that may have a problem is the intersection of Grand View Drive and U.S. 93. This intersection may need the installation of an actuated left turn phase for

northbound traffic by the year 2020. With this one intersection modification all of the intersections adjacent to Section 36 will provide an acceptable LOS C or better through the year 2020.

Scenario 2

The greatest traffic impacts would occur in the areas adjacent to the property. The likely traffic demands for each intersection within and adjacent to the development were determined for the A.M. and P.M. peak weekday conditions using the trip generation rates, and the estimated approach and egress patterns.

Level of Service analyses were produced for the years 2005, 2010, and 2020. The calculations indicate the traffic conditions at the end of each of these growth phases. These analyses take into account the committed developments that are currently being proposed within the area, the impacts of the scenario, and the general growth patterns within the greater Kalispell area.

Using the trip generation tables for the mid impact scenario, the anticipated trip distribution, and probably intersection turning movements it was possible to determine probable peak hour turning movement for the intersections around the development. Using projected turning movements for the three development years, a LOS table was created to show the traffic impacts the development would have. The analysis indicates that it will be necessary to modify the form of traffic control and the intersection geometrics in the future to ensure that the some intersections function optimally. These alterations were applied by determining the minimum alterations necessary to keep a desirable LOS. Alterations to the existing signal timings were made to improve the LOS where possible. These modifications include signal timing and phasing changes, the addition of new actuated phases, and the installation of new lanes when necessary. This analysis produced an optimized LOS for each intersection. The LOS analysis for Scenario 2 is shown in **Table 4.6.**

Table 4.6 Scenario 2 LOS Analysis

	Existing		2005		2010		2020	
Intersection	**AM**	**PM**	**AM**	**PM**	**AM**	**PM**	**AM**	**PM**
West Reserve & 93 (S)	B	B	C	B	C	F (C*)	F (C*)	F (C*)
Grand View & 93 (S)	A	A	A		A	E (B*)	B	F (C*)
West Reserve & Stillwater (U)	B	B	C	B	C	B	B	B
Four-Mile and Stillwater (U)	A	A	B	B	C	B	B	C
Int #1 & West Reserve (U)	NA	NA	A	A	B	B	C	B
Int #2 & 93 (S)	NA	NA	A	B	B	C	F (C*)	F (C*)
Int #3 & 93 (U)	NA	NA	B	B	B	C	C	F(C*)
Int #4 & Stillwater (U)	NA	NA	C	B	C	B	B	B
INT #5 (U)	NA	NA	NA	NA	NA	NA	F (C*)	F (B*)
Int #6 (U)	NA	NA	NA	NA	B	B	F (C*)	F (E*, B**)
Int #7 (U)	NA	NA	NA	NA	NA	NA	B	B

(S) – Intersection is signalized or will be signalized prior to 2005
(U) – This intersection will initially be STOP sign controlled
*Possible LOS with lane or signal phasing improvements.
** Meets peak hour volume signal warrant - LOS if intersection were to be signalized

The LOS analysis indicates that the anticipated traffic volumes generated by this scenario will impact the adjacent intersections. All of the intersection within and adjacent to the development will function adequately (LOS C or better) through the year 2005. It is noted that improved performance at the Grand View/93 intersection would occur if a new northbound left turn phase were added to the current signal.

The second phase of the development, between 2005 and 2010, will generate enough additional traffic that two intersections would fail. These intersections include West Reserve/93 and Grand View/93. In order to enable these intersections to continue to provide an acceptable LOS it will be necessary to make some intersection modifications. With these modifications all of the intersections will function at LOS C or better. Based on the findings of this analysis these modifications are hereby included as part of the proposed development. The required intersection modifications include the following:

Intersection modifications required 2005-2010

- West Reserve/93 – add an eastbound left turn lane, a westbound right turn lane, and a new east/west left-turn phase
- Grand View/93 – add a northbound left-turn phase

The third phase of the development will add more traffic to the road network causing six intersections to fail. These intersections include West Reserve/93, Grand View/93, #2, #3, #5, and #6. Based on the findings of this analysis these modifications are hereby included as part of the proposed development. In order to continue to provide an acceptable LOS at these intersections the modifications required from 2005-2010 must be in-place and the following additional modifications must be implemented:

Intersection modifications required 2010-2020

- West Reserve/93 –modify the northbound/southbound signal phasing
- #2 – add a eastbound left-turn lane and modify signal phasing
- #5 – Add left turn lanes to each leg of the intersection
- #6 – Add left turn lanes to each leg of the intersection (LOS E) or signalize the intersection (LOS B)

There will also be traffic impacts on other routes within the Kalispell area. The primary traffic impacts discussed above describe the major impacts to the roads and intersections immediately adjacent to Section 36. In addition to these primary impacts, other less severe traffic impacts will occur in other parts of the community. The large majority of these other traffic impacts will occur between the proposed development site and Downtown Kalispell. As mentioned in the trip generation analysis, Scenario 2 will result in an additional 30,120 weekday vehicle trips on the community road network. By the year 2020 it is estimated that 80% of these trips will be external trips to the site. This translates into 3,570 additional trips during the weekday morning peak hour and 4,121 additional trips during the weekday evening peak hour. This scenario will increase the average daily traffic on Highway 93 south of the site by about 7,000 vpd. The anticipated distribution of these trips indicates that this development, under Scenario 2 will result in traffic impacts at most major intersections along Highway 93 between the West Reserve and the Central Business District. These intersections along Highway 93 include Northridge, Meridian, Sunny View, Conway, Wyoming, and Idaho.

It is anticipated that Section 36 development generated traffic will represent a notable percentage of the total traffic using these intersections. The development traffic will cause traffic volume increases on Highway 93 and therefore will consume some of the reserve capacity currently available at these intersections. Increased traffic volumes generated by the proposed development will result in an incremental decrease in intersection performance at all of the intersections along Highway 93 between the development site and the center of town. The traffic impacts will be in the form of increased traffic congestion and vehicle delay. It is likely that the increased traffic would cause the LOS at some of these intersections to degrade by at least one rating level. In most cases it is

anticipated that modifications to the signal phasing will allow the intersection to perform at an acceptable LOS. It may be necessary to provide additional turn lanes on the side road approaches at Meridian/93 and Wyoming/93 to enable these intersections to perform adequately. Additional traffic at the intersection of Highway 93 and Idaho is of special concern. It is estimated that by the year 2020 traffic generated by the Section 36 development will amount to about 14% of all approach traffic at this intersection under Scenario 2. It is estimated that by 2020, development-generated traffic will represent about 5% of the traffic using Main Street through the Central Business District of Kalispell.

The data indicates that the development-generated traffic under Scenario 2 will increase the daily traffic volume on Highway 93 south of Grand View to approximately 42,000 vpd by the year 2020 (up from 35,000 vpd with no-action). This amount of traffic will create some traffic congestion and safety problems for vehicles attempting to access or egress the 93 corridor at unsignalized intersections. It is possible that this action would create the need to signalize several intersections along 93 that are currently controlled by stop signs. It is also likely that this volume of traffic will create the need for separate right-turn lanes at most of the signalized intersections.

Traffic impacts will also occur on Stillwater and Meridian Roads. A portion of the traffic generated by the proposed development will use this route to access Kalispell. The additional traffic will consume some of the reserve capacity currently available at the intersections along this route. Increased traffic volumes generated by the proposed development will result in a decrease in intersection performance at all of the intersections along Stillwater and Meridian Roads. The traffic impacts will result in increased traffic congestion and vehicle delay. It is possible that the increased traffic would cause the LOS at some of these intersections to degrade by one LOS rating level. A current MDT project is underway to reconstruct Meridian Road from Idaho to Highway 93. This project will include signalizing the intersections at Three-Mile and Two-Mile Drives as well as upgrading the intersections at Idaho and Highway 93. The reconstruction of this corridor should minimize the traffic impacts created by the proposed development. Additional traffic from the proposed development will use the intersection of Meridian Road and Idaho Street. Additional traffic volumes at this intersection will incrementally reduce the LOS of this intersection. It is estimated that by the year 2020 traffic generated by the Section 36 development will amount to about 5% of all approach traffic at this intersection under Scenario 2.

If the bypass were to be constructed during the next 20 years, it would likely shift between 25% and 30% of the traffic away from Highway 93 south of West Reserve and away from Stillwater. This shift would have a beneficial impact on the Highway 93 intersections south of West Reserve and similarly on Stillwater. The new bypass corridor through Section 36 would tend to have the greatest impact on pedestrian and bicycle traffic. Special pedestrian and bicycle facilities need to be considered at both bypass intersections within Section 36.

Scenario 3

The greatest traffic impacts would occur in the areas adjacent to the property. The likely traffic demands for each intersection within and adjacent to the development were determined for the A.M. and P.M. peak weekday conditions using the trip generation rates, and the estimated approach and egress patterns.

Level of Service analyses were produced for the years 2005, 2010, and 2020. The calculations indicate the traffic conditions at the end of each of these growth phases. These analyses take into account the committed developments that are currently being proposed within the area, the impacts of the scenario, and the general growth patterns within the greater Kalispell area.

Using the trip generation tables for growth Scenario 3, the anticipated trip distribution, and probably intersection turning movements it was possible to determine probable peak hour turning movement for the intersections around the development. Using projected turning movements for the three development years, a LOS table was created to show the traffic impacts the development would have. The analysis indicates that it will be necessary to modify the form of traffic control and the intersection geometrics in the future to ensure that the some intersections function optimally. These alterations were applied by determining the minimum alterations necessary to keep a desirable LOS. Alterations to the existing signal timings were made to improve the LOS where possible. These modifications include signal timing and phasing changes, the addition of new actuated phases, and the installation of new lanes when necessary. This analysis produced an optimized LOS for each intersection. The LOS analysis for Scenario 3 is shown in **Table 4.7.**

Table 4.7 Scenario 3 LOS Analysis

	Existing		2005		2010		2020	
Intersection	**AM**	**PM**	**AM**	**PM**	**AM**	**PM**	**AM**	**PM**
West Reserve & 93 (S)	B	B	C	C	C	F(C*)	F (C*)	F (D*)
Grand View & 93 (S)	A	A	A	C (B*)	A	E(B*)	C (B*)	F (C*)
West Reserve & Stillwater (U)	B	B	C	B	C	B	B	B
Four-Mile and Stillwater (U)	A	A	B	B	C	B	C	C
Int #1 & West Reserve (U)	NA	NA	A	A	B	B	C	C
Int #2 & 93 (S)	NA	NA	A	B	B	C	F (C*)	F (C*)
Int #3 & 93 (U)	NA	NA	B	B	B	D (B*)	D (C*)	F(C*)
Int #4 & Stillwater (U)	NA	NA	C	B	C	B	C	C
INT #5 (U)	NA	NA	NA	NA	NA	NA	F (B**)	F (B**)
Int #6 (U)	NA	NA	NA	NA	B	B	F (C**)	F (C**)
Int#7 (U)	NA	NA	NA	NA	NA	NA	B	B

(S) – Intersection is signalized or will be signalized prior to 2005
(U) – This intersection will initially be STOP sign controlled
*Possible LOS with lane or signal phasing improvements.
** MEETS PEAK HOUR V OLUME SIGNAL WARRANT - LOS IF INTERSECTI ON WERE TO BE SIGNAL IZED

The LOS analysis indicates that the anticipated traffic volumes generated by this scenario will impact the adjacent intersections. All of the intersection within and adjacent to the development will function adequately (LOS C or better) through the year 2005. It is noted that improved performance at the Grand View/93 intersection would occur if a new northbound left turn phase were added to the current signal.

The second phase of the development, between 2005 and 2010, will generate enough additional traffic that three intersections would fail. These intersections include West Reserve/93, Grand View/93, and #3. In order to enable these intersections to continue to provide an acceptable LOS it will be necessary to make some intersection modifications. With these modifications all of the intersections will function at LOS C or better. Based on the findings of this analysis these modifications are hereby included as part of the proposed development. The required intersection modifications include the following:

Intersection modifications recommended by 2005

- Grand View/93 – add a northbound left-turn phase

Intersection modifications required 2005-2010

- West Reserve/93 – add an eastbound left turn lane and a new east/west left-turn phase
- Grand View/93 – add a northbound left-turn phase
- #3 – add a right turn ramp and a southbound merge lane

The third phase of the development will add more traffic to the road network causing six intersections to fail. These intersections include West Reserve/93, Grand View/93, #2, #3, #5, and #6. Based on the findings of this analysis these modifications are hereby included as part of the proposed development. In order to continue to provide an acceptable LOS at these intersections the modifications required from 2005-2010 must be in-place and the following additional modifications must be implemented:

Intersection modifications required 2010-2020

- West Reserve/93 – add a new westbound right-turn lane and change the westbound right/through lane into a through-only traffic lane and modify the northbound/southbound signal phasing
- Grand View/93 – add a westbound left-turn lane
- #2 – add a eastbound left-turn lane and a westbound right-turn lane, and modify signal phasing
- #5 – signalize intersection
- #6 – signalize intersection

There will also be traffic impacts on other routes within the Kalispell area. The primary traffic impacts discussed above describe the major impacts to the roads and intersections immediately adjacent to Section 36. In addition to these primary impacts, other less severe traffic impacts will occur in other parts of the community. The large majority of these other traffic impacts will occur between the proposed development site and Downtown Kalispell. As mentioned in the trip generation analysis, Scenario 3 will result in an additional 45,451 weekday vehicle trips on the community road network. By the year 2020 it is estimated that 80% of these trips will be external trips to the site. This translates into 3,777 additional trips during the weekday morning peak hour and 3,945 additional trips during the weekday evening peak hour. The anticipated distribution of these trips indicates that this development, under Scenario 3 will increase the average daily traffic volumes on Highway 93 south of the site by about 12,000 vpd (from 35,000 vpd with no-action to 47,000 vpd in Scenario 3). This increase will result in traffic impacts at most major intersections along Highway 93 between the West Reserve and the Central Business District. These intersections along Highway 93 include Northridge, Meridian, Sunny View, Conway, Wyoming, and Idaho.

It is anticipated that Section 36 development generated traffic will represent a notable percentage of the total traffic using these intersections. The development traffic will cause traffic volume increases on Highway 93 and therefore will consume most of the reserve capacity currently available at these intersections. Increased traffic volumes generated by the proposed development will result in an incremental decrease in intersection performance at all of the intersections along Highway 93 between the development site and the center of town. The traffic impacts will be in the form of increased traffic congestion and vehicle delay. It is likely that the increased traffic would cause the LOS at some of these intersections to degrade by at least one rating level. In most cases it is anticipated that modifications to the signal phasing will allow the intersection to perform at an acceptable LOS. It may be necessary to provide additional turn lanes on the side road approaches at Meridian/93 and Wyoming/93 to enable these intersections to perform adequately. Additional traffic at the intersection of Highway 93 and Idaho is of special concern. It is estimated that by the year 2020 traffic generated by the Section 36 development will amount to about 18% of all approach traffic at this intersection under Scenario 3. It is estimated that by 2020, development-generated traffic will represent about 6% of the traffic using Main Street through the Central Business District of Kalispell.

The data indicates that the development-generated traffic under Scenario 3 will increase the daily traffic volume on Highway 93 south of Grand View to approximately 47,000 vpd (up from 35,000 vpd with no-action) by the year 2020. This amount of traffic will create traffic congestion and safety problems for vehicles attempting to access or egress the 93 corridor at unsignalized intersections. It is likely that this action would create the need to signalize several intersections along 93 that are currently controlled by stop signs. It is also very likely that this volume of traffic will create the need for separate right-turn lanes at most of the signalized intersections. It is possible that that there will be a need to expand some portions of the Highway 93 corridor to a seven-lane facility in order to adequately accommodate 47,000 vehicles per day.

Traffic impacts will also occur on Stillwater and Meridian Roads. A portion of the traffic generated by the proposed development will use this route to access Kalispell. The additional traffic will consume some of the reserve capacity currently available at the intersections along this route. Increased traffic volumes generated by the proposed development will result in a decrease in intersection performance at all of the intersections along Stillwater and Meridian Roads. The traffic impacts will result in increased traffic congestion and vehicle delay. It is possible that the increased traffic would cause the LOS at some of these intersections to degrade by one LOS rating level. An upcoming MDT project will reconstruct Meridian Road from Idaho to Highway 93. This project will include expanding the road to three-lane and four-lane sections and upgrading the signalized intersections at Three-Mile and Two-Mile Drives as well as upgrading the intersections at Idaho and Highway 93. The reconstruction of this corridor should minimize the traffic impacts created by the proposed development. Additional traffic from the proposed development will use the intersection of Meridian Road and Idaho Street. Additional traffic volumes at this intersection will incrementally reduce the LOS of this intersection. It is estimated that by the year 2020 traffic generated by the Section 36 development will amount to about 6% of all approach traffic at this intersection under Scenario 3.

If the bypass were to be constructed during the next 20 years, it would likely shift between 25% and 30% of the traffic away from Highway 93 south of West Reserve and away from Stillwater. This shift would have a beneficial impact on the Highway 93 intersections south of West Reserve and similarly on Stillwater. The new bypass corridor through Section 36 would tend to have the greatest impact on pedestrian and bicycle traffic. Special pedestrian and bicycle facilities need to be considered at both bypass intersections within Section 36.

Scenario 4

A LOS analysis was performed on all of the intersections within and adjacent to the proposed development using the traffic volumes that would likely result. A summary of this analysis is presented in **Table 4.8.**

Table 4.8 Scenario 4 LOS Analysis

	Existing		2005		2010		2020	
Intersection	**AM**	**PM**	**AM**	**PM**	**AM**	**PM**	**AM**	**PM**
West Reserve & 93 (S)	B	B	B	C	E (C*)	F (C*)	F (C*)	F (C*)
Grand View & 93 (S)	A	A	A	C (B*)	B	F (C*)	D (B*)	F (D*)
West Reserve & Stillwater (U)	B	B	B	B	C	C	B	C
Four-Mile and Stillwater (U)	A	A	B	B	F	D	C	F (C***)
Int #1 & West Reserve (U)	NA	NA	B	A	C	C	C	E (C*)
Int #2 & 93 (S)	NA	NA	A	B	E (B*)	F (C*)	F (C*)	F (C*)
Int #3 & 93 (U)	NA	NA	B	C	B	E (C*)	F (C*)	F (D*)
Int #4 & Stillwater (U)	NA	NA	C	B	D	C	C	C
INT #5 (U)	NA	NA	NA	NA	NA	NA	F (C**)	F(C**)
Int #6 (U)	NA	NA	A	B	D (B***)	F (C***)	F (C**)	F (C**)
Int #7 (U)	NA	NA	NA	NA	NA	NA	B	C

(S) – Intersection is signalized or will be signalized prior to 2005
(U) – This intersection will initially be STOP sign controlled
*Possible LOS with lane or signal phasing improvements.
** Meets peak hour volume signal warrant - LOS if intersection were to be signalized
*** Possible LOS if intersection were changed to all -way STOP controls

According to the LOS analysis the trips generated by the development will cause several intersections to fail. All of the intersections will function adequately through the year 2005. Although the intersections will operate adequately, signal phasing modifications are recommended at two intersections (Grand View/93 and #2), which will enhance intersection performance. By the year 2010 the additional traffic volumes will have caused five intersections to fail. These intersections include West Reserve/93, Grand View/93, #2, #3, and #6. In order to enable these intersections to continue to provide an acceptable LOS it will be necessary to make some intersection modifications. With these modifications all but one of the intersections will function at LOS C or better. Based on the findings of this analysis these modifications are hereby included as part of the proposed development. The required intersection modifications include the following:

Intersection modifications recommended by 2005

- Grand View/93 – add a northbound left-turn phase
- #2 – modify signal phasing

Intersection modifications required 2005-2010

- West Reserve/93 – add a new eastbound left-turn lane, add a westbound right-turn lane, and modify signal phasing
- Grand View/93 – add a northbound left-turn phase
- #2 – Add an eastbound left-turn lane, and modify signal phasing
- #3 – Add a right turn ramp and a southbound merge lane
- #6 - Change intersection to Four-Way STOP Control

The third phase of the development will add more traffic to the road network causing a total of eight intersections to fail. In order to continue to provide an acceptable LOS at these intersections the modifications required from 2005-2010 must be in-place and the following additional modifications must be implemented:

Intersection modifications required 2010-2020

- West Reserve/93 – Add a second westbound traffic lane for westbound traffic on West Reserve between 93 and Stillwater
- Grand View/93 – add an additional northbound left-turn lane and widen Four-Mile west of 93 to include two westbound traffic lanes, and add a westbound left-turn lane
- Four-Mile/Stillwater – convert to a 4-way STOP, and add a westbound left-turn lane
- #1 - add a northbound left-turn lane (this lane will already exist if the road segment between #1 and #5 is already three-lanes wide)
- #2 – add a westbound right-turn lane, and modify signal phasing
- #5 - Change intersection to Four-Way STOP Control

There will also be traffic impacts on other routes within the Kalispell area. In addition to the primary traffic impacts discussed above, other less severe traffic impacts will occur in other parts of the community. The majority of these other traffic impacts will occur between the proposed development site and Downtown Kalispell. Scenario 4 will result in an additional 65,985 weekday vehicle trips on the community road network. By the year 2020 it is estimated that 80% of these trips will be external trips to the site. This translates into 4,699 additional trips during the weekday morning peak hour and 5,918 additional trips during the weekday evening peak hour. This scenario will increase the average daily traffic on Highway 93 south of the site by about 20,000 vpd. Under Scenario 4 traffic impacts will occur at most major intersections along Highway 93 between the West Reserve and the Central Business District. These intersections along Highway 93 include Northridge, Meridian, Sunny View, Conway, Wyoming, and Idaho.

It is anticipated that Section 36 development generated traffic will cause traffic volume increases on Highway 93 and therefor will consume most of the reserve capacity currently available at these intersections. Increased traffic volumes generated by the proposed development will result in an incremental decrease in intersection performance at all of the intersections along Highway 93 between the development site and the center of town. It may be necessary to provide additional turn lanes on the side road approaches at Meridian/93 and Wyoming/93 to enable the intersection to perform adequately. Additional traffic at the intersection of Highway 93 and Idaho is of special concern. It is estimated that by the year 2020 traffic generated by the Section 36 development will amount to about 28% of all approach traffic at this intersection under Scenario 4. By 2020 it is estimated that about 9% of the traffic on Main Street through the Central Business District will be the result of the Section 36 development under Scenario 4.

The data indicates that the development-generated traffic under Scenario 4 will increase the daily traffic volume on Highway 93 south of Grand View to approximately 55,000 vpd by the year 2020 (up from 35,000 vpd with no-action). This amount of traffic will create traffic congestion and safety problems for vehicles attempting to access or egress the 93 corridor at unsignalized intersections. It is likely that this action would create the need to signalize several intersections along 93 that are currently controlled by stop signs. Separate right-turn lanes will need to be added at most of the signalized intersections. It is very likely that major portions of the Highway 93 corridor between Grand View and Idaho would have to be expanded to a seven-lane facility in order to adequately accommodate 55,000 vehicles per day.

Traffic impacts will also occur on Stillwater and Meridian Roads. The additional traffic will consume some of the reserve capacity currently available at these intersections along this route. Increased traffic volumes generated by the proposed development will result in an incremental decrease in intersection performance, increased traffic congestion, and vehicle delay at all of the intersections along Stillwater and Meridian Roads. It is possible that the increased traffic would cause the LOS at some of these intersections to degrade by one rating level. An upcoming MDT project is underway that will reconstruct Meridian Road from Idaho to Highway 93. This project will include widening the road to three-lane and four-lane road sections and upgrading the signalized intersections at Three-

Mile and Two-Mile Drives as well as upgrading the intersections at Idaho and Highway 93. The reconstruction of this corridor should minimize the traffic impacts created by the proposed development. Additional traffic from the proposed development will use the intersection of Meridian Road and Idaho Street. Additional traffic volumes at this intersection will incrementally reduce the LOS of this intersection. It is estimated that by the year 2020 traffic generated by the Section 36 development will amount to about 9% of all approach traffic at this intersection under Scenario 4.

If the bypass were to be constructed during the next 20 years, it would likely shift between 25% and 30% of the traffic away from Highway 93 south of West Reserve and away from Stillwater. This shift would have a beneficial impact on the Highway 93 intersections south of West Reserve and similarly on Stillwater. The new bypass corridor through Section 36 would tend to have the greatest impact on pedestrian and bicycle traffic. Special pedestrian and bicycle facilities need to be considered at both bypass intersections within Section 36.

4.3.2.8 Relationship to Alternatives

Traffic will be a component of review for all subsequent project proposals on Section 36 to assess individual and cumulative responsibility for on and off-site mitigation measures.

Alternative A – No Action

This alternative will contribute the least amount of traffic from Section 36 as compared to the other alternatives. There will be no need to construct an internal road network or participate in any upgrades to the adjoining intersections.

Alternative B – Section 36 Neighborhood Plan

Each of the development scenarios could represent a possible build-out scenario for this alternative. Depending on the ultimate development strategy for Section 36, impacts to the adjoining transportation system could be minimal to extensive. It is expected under all situations that the internal collector road system will be developed as shown in Figures 16, 17, and 18. The timing and completion of the road segments will depend on the rate and location of development. As development increases in Section 36, improvements can be expected to the adjoining transportation system. Under a rapid development scenario as represented by Development Scenario 4, significant improvements would be necessary to the intersections of West Reserve Drive and Grandview Drive plus intersection improvements interior to Section 36.

Alternative C – Section 36 Neighborhood Plan: Modified Commercial

Many of the traffic assumptions of Alternative B are common to Alternative C. The internal collector road system will be similar and the extent of traffic impacts will depend on the rate of development. However, this Alternative has the potential for significantly reduced traffic impacts if "business park" uses in the Mixed Commercial POD predominate over commercial retail uses. As an example, the ratio of trips per day (per 1,000 sq ft of building) for a business park versus a discount store is more than 4:1. Under this Alternative, business and technology uses are prioritized over retail uses for a given period of time.

Alternative D—Section 36 Neighborhood Plan: Modified Professional and Residential

The expected traffic effects of Alternative D are very similar to Alternative C. The rate and density of development will determine the extent of traffic effects. As with Alternatives B & C, the proposed phasing and completion of the internal collector roads will be similar. However, the generation of trips from the SW ¼ of Section 36 could be significantly reduced over what might occur in Alternatives B, C & E. As proposed under this Alternative, single family dwellings would be a prioritized use as opposed to the high density anticipations of the other 3 action alternatives. The lower density development associated with single family dwellings would significantly reduce traffic generation from that ¼ section.

Alternative E – Section 36 Neighborhood Plan: Traditional Zoning

This alternative would have greater land use flexibility as compared to the other action alternatives. This would be especially apparent in the Mixed Commercial POD, where there would be substantially more retail commercial opportunities. Trip generation from the NW ¼ from the commercial uses could be significantly higher under this alternative.

4.3.3 Water Supply

Development drives the demand for water delivery to Section 36. Except for the No Action Alternative, all alternatives anticipate the need for a community water supply system linked to the city of Kalispell. To help define the effects of development on water demand, 3 development scenarios (plus a status quo scenario) were used to help define the cause/effect relationships of development to water demand See Section 2.3.1). The development scenarios are not plan alternatives – just mechanisms to help identify and bracket the effects of development on water demand. The results of the analysis will help to define the possible effects of a particular plan alternative.

4.3.3.1 Water Demand Analysis

In order to develop projections for Section 36 water demand, existing water usage and population data must be analyzed to create per capita water demand values. These values can then be used to evaluate future demands.

Demand Assignment

The system-wide demands were estimated based on historical production data provided by the City of Kalispell as reported in the draft Kalispell Facility Plan 2000 document. Combining production data with existing population and employment results in the demand assignment parameters found in Table 4.9

Table 4.9 Summary of Water Demand Assignment Parameters

Residential demand factor (gpd/capita)	131
Commercial demand factor (gpd/employee)	60
Maximum day to average day peaking factor	2.7
Peak hour to average day peaking factor	4.0

Criteria used to evaluate and size water facilities are summarized in Table 4.10.

Table 4.10 Water System Evaluation Criteria

Evaluation Criteria	Value
Minimum pressure without fire (psi)	40
Minimum pressure with fire (psi)	20
Maximum pressure (psi)	125
Maximum pipeline velocity without fire (fps)	7
Maximum pipeline velocity with fire (fps)	10
Required fire flows during maximum day demand (gpm)	

Evaluation Criteria	Value
Major commercial and schools	4000
Downtown commercial and hospitals	3000
Commercial corridors	2000
Residential	1000
Required storage volume	
Equalization	25% of maximum day demand
Emergency/Fire Flow (4 hours x 4000 gpm) (gallons)	960,000

[1]Equalization volume may be reduced by firm capacity with standby power.

Section 36 Water Demand Evaluation

The water supply and distribution system was analyzed with respect to providing service to Section 36. Impact on existing infrastructure, as well as, requirements for future supply and storage were examined. The population, employment and water demand data for Section 36 is summarized in Tables 4.11, 4.12, 4.13 and 4.14.

Table 4.11 Section 36 Scenario 1 Water Demand Projections

Scenario 1	Phase		
	0-5 Years	5-10 years	10-20 years
Residential Population	0	0	0
Residential Demand Factor (gpd per capita)	131	131	131
Calculated Residential Demand (gpd)	0	0	0
Commercial Population[1]	270	310	550
Commercial Demand Factor (gpd per capita)	60	60	60
Calculated Commercial Demand (gpd)	16,200	18,600	33,000
Total Average Day Demand (gpd)	16,200	18,600	33,000
Maximum Day Demand (gpd)	43,740	50,220	89,100
Peak Hour Demand (gpd)	64,800	74,400	132,000

[1]Commercial Population includes employment, recreation, student and motel.

Table 4.12 Section 36 Scenario 2 Water Demand Projections

Scenario 2	Phase		
	0-5 Years	5-10 years	10-20 years
Residential Population	0	250	1570
Residential Demand Factor (gpd per capita)	131	131	131
Calculated Residential Demand (gpd)	0	32,750	205,670
Commercial Population[1]	2,243	3,994	5,536
Commercial Demand Factor (gpd per capita)	60	60	60
Calculated Commercial Demand (gpd)	134,580	239,640	332,160
Total Average Day Demand (gpd)	134,580	272,390	537,830
Maximum Day Demand (gpd)	363,366	735,453	1,452,141
Peak Hour Demand (gpd)	538,320	1,089,560	2,151,320

[1]Commercial Population includes employment, recreation, student and motel.

Table 4.13 Section 36 Scenario 3 Water Demand Projections

Scenario 3	Phase		
	0-5 Years	5-10 Years	10-20 Years
Residential Population	0	250	1,560
Residential Demand Factor (gpd per capita)	131	131	131
Calculated Residential Demand (gpd)	0	32,750	204,360
Commercial Population[1]	2,412	4,204	6,993
Commercial Demand Factor (gpd per capita)	60	60	60
Calculated Commercial Demand (gpd)	144,720	252,240	419,580
Total Average Day Demand (gpd)	144,720	284,990	623,940
Maximum Day Demand (gpd)	390,744	769,473	1,684,638
Peak Hour Demand (gpd)	578,880	1,139,960	2,495,760

[1] Commercial population includes employment, recreation, student and motel.

Table 4.14 Section 36 Scenario 4 Water Demand Projections

Scenario 4	Phase		
	0-5 Years	5-10 Years	10-20 Years
Residential Population	375	2,375	5,015
Residential Demand Factor (gpd per capita)	131	131	131
Calculated Residential Demand (gpd)	49,125	311,125	656,965
Commercial Population[1]	3,735	5,702	12,239
Commercial Demand Factor (gpd per capita)	60	60	60
Calculated Commercial Demand (gpd)	224,100	342,120	734,340
Total Average Day Demand (gpd)	273,225	653,245	1,391,305
Maximum Day Demand (gpd)	737,708	1,763,762	3,756,524
Peak Hour Demand (gpd)	1,092,900	2,612,980	5,565,220

[1] Commercial population includes employment, recreation, student and motel.

4.3.3.2 Water Supply Alternative Analysis

Several alternatives exist for providing water to meet the needs and the demands of future growth in Section 36. The alternatives evaluated in this report include developing an independent water system and expanding the City of Kalispell water system to serve Section 36. A combination of expanded storage, increased production capacity, and increased booster pumping capacity may be used to meet demands.

Expanding the Kalispell Water System

Existing System Evaluation

The most critical condition the system will face is a fire flow during the maximum daily demand period. These factors are summarized in Table 3-7.

Table 4.15 Water Demand Conditions – Existing Kalispell Water System

Pressure Zone	Maximum Day Demand (gpm)	Fire Demand (gpm)
Upper Zone	1,400	4,000
Lower Zone	4,500 [4]	4,000

4 Includes water pumped from lower zone to upper zone to augment deficiency in upper pressure zone production capacity

A four-hour duration fire in the upper zone during the maximum day demand period would require a water volume of 1,296,000 gallons. The required equalization volume is 504,000 gallons. The current storage volume in the upper zone is 100,000 gallons and the firm production capacity with the largest booster pump out of service is 3,800 gpm. If the upper zone storage tank were full when a fire starts, it would be drained in 62 minutes under maximum day demand conditions with a 4,000 gpm fire flow requirement. Additional storage, production capacity, booster pumping, or a combination of each, would be needed to meet the requirements for equalization and a 4-hour, 4,000 gpm fire.

Emergency storage capacity is another important factor in determining the adequacy of the water system. The system was analyzed to determine its ability to provide service if an extended power outage were to occur. Facilities that currently have back-up power include the Buffalo Hills Well, the Grandview Well, and one booster station pump. The systems production capacity during a power outage is summarized in Table 4.16.

Table 4.16 Emergency Production Capacity

Pressure Zone	Facility	Production Capacity (gpm)
Upper Zone	Booster Pumping Station 2	1,100
	Grandview Well	1,100
Lower Zone	Buffalo Hills Well	2,000

If the reservoirs were full, the lower zone system could sustain service during a power outage and maximum day demand for 15 hours. If a fire were to occur during the power outage the lower zone system could sustain a 4,000 gpm fire flow for 8.2 hours. If the upper zone reservoir was full and a power outage occurred, it could sustain continuous service under maximum day demand conditions. If a fire were to occur during the power outage the upper zone could sustain a 4,000 gpm fire flow for 31 minutes.

The lower pressure zone has adequate storage and production capacity to meet requirements for equalization and a 4,000 gpm, 4-hour fire. The current production capacity does not keep pace with maximum day demands during emergency conditions. The upper pressure zone has adequate storage and production capacity to meet existing maximum day demands but is deficient in meeting fire flow requirements if a 4000 gpm, 4-hour fire is required and recommendations for equalization. Table 4-17 summarizes existing storage and production capacity, required storage and production capacity, and existing deficiencies.

Table 4.17 Existing Storage and Production Capacity Deficiencies

Pressure Zone	*Storage Capacity (gallons)*	*Production Capacity (gpm, Firm)*	*Required Storage Capacity[3] (gallons)*	*Required Production Capacity (gpm, Firm)*	*Storage Deficiency (gallons)*	*Production Deficiency (gpm)*
Upper Zone	100,000	3,800 (2,200)[1]	852,000[2]	1,400	752,000	None
Lower Zone	4,400,000	4,950 (2,000)[1]	2,460,000[2]	4,500[3]	None	(2,500)[1]

1 Emergency production capacity
2 Storage volumes required to meet a 4 -hour fire flow of 4000 gpm and an equalization volume of 25% of max day demand adjusted for emergency production capacity.
3 Includes 300 gpm pumped to the upper pressure zone
4Increasing the production capacity of the system would reduce the amount of storage capacity required

Scenario 1 Impact Evaluation

The factors for fire demand and maximum daily demand are summarized in Table 4.18.

Table 4.18 Water Demand Conditions – Scenario 1

Phase	Maximum Day Demand (gpm)	Fire Demand (gpm)
0-5 years	30	0
5-10 years	35	0
10-20 years	92	0

Scenario 1 includes expansion of recreation fields only. No build out of residential or commercial development is planned. Fire flow would not be required under this scenario. Maximum day demand would require water volumes of 43,200 gallons, 50,400 gallons, and 132,480 gallons respectively for the three phases.

Table 4.19 Summarizes existing storage and production capacity, required storage and production capacity and deficiencies under Scenario 1 if connected to the City of Kalispell water system.

Table 4.19 Scenario 1 Storage and Production Capacity Deficiencies

Upper Zone Storage Capacity (gallons)	*Production Capacity (gpm, Firm)*	*Design Period*	*Required Upper Zone Storage Capacity[3] (gallons)*	*Required Production Capacity (gpm, Firm)*	*Upper Zone Storage Deficiency (gallons)*	*Production Deficiency (gpm)*
100,000	***3,800 (2,200)[1]***	***0 –5 years***	***861,000[2]***	***1,430***	***761,000***	***0***
		5–10 years	***862,500[2]***	1,435	***762,500***	0
		10-20 years	***879,600[2]***	1,492	***779,600***	***0***

1 Emergency production capacity

2 Storage volume required to meet a 4 -hour fire flow of 4000 gpm and equalization volume equal to 25% of the max day demand adjusted for emergency production capacity.

3Increasing the production capacity of the system would reduce the amount of storage capacity required.

Scenario 2 Impact Evaluation

The factors for fire demand and maximum daily demand are summarized in Table 4.20.

Table 4.20 Water Demand Conditions – Scenario 2

Phase	Maximum Day Demand (gpm)	Fire Demand (gpm)
0-5 years	252	4,000[1]
5-10 years	510	4,000
10-20 years	1,008	4,000

[1]Based on requirement of 4,000 gpm for the proposed high school

A four-hour duration fire in Section 36 during the maximum day demand period under Scenario 2 conditions would require water volumes of 1,020,480 gallons, 1,082,400 gallons, and 1,201,920 gallons respectively. The required equalization volumes are 90,720 gallons, 183,600 gallons and 362,880 gallons respectively. Connecting to the existing Kalispell water system would require additional storage, production capacity, booster pumping or a combination of each to meet the requirements for equalization and a 4-hour, 4000 gpm fire.

Table 4.21 summarizes existing storage and production capacity, required storage and production capacity, and deficiencies under Scenario 2 if connected to the City of Kalispell water system.

Table 4.21 Scenario 2 Storage and Production Capacity Deficiencies

Upper Zone Storage Capacity (gallons)	*Production Capacity (gpm, Firm)*	*Design Period*	*Required Upper Zone Storage Capacity[3] (gallons)*	*Required Production Capacity (gpm, Firm)*	*Upper Zone Storage Deficiency (gallons)*	*Production Deficiency (gpm)*
100,000	3,800	0 –5 years	927,600[2]	1,652	827,600	0
	(2,200)[1]	5–10 years	1,005,000	1,910	1,005,000	0
		10-20 years	1,109,760	2,408	1,009,760	(208)[1]

1 Emergency production capacity
2 Storage volume required to meet a 4 -hour fire flow of 4000 gpm and equalization volume equal to 25% of the max day demand adjusted for emergency production ca pacity.
3Increasing the production capacity of the system would reduce the amount of storage capacity required.

Scenario 3 Impact Evaluation

The factors for fire demand and maximum daily demand are summarized in Table 4.22.

Table 4.22 Water Demand Conditions – Scenario 3

Phase	Maximum Day Demand (gpm)	Fire Demand (gpm)
0-5 years	271	4,000[1]
5-10 years	534	4,000
10-20 years	1,170	4,000

[1] Based on requirement of 4,000 gpm for the proposed high school

A four-hour duration fire in Section 36 during the maximum day demand period under Scenario 3 conditions would require water volumes of 1,025,040 gallons, 1,088,160 gallons and 1,240,800 gallons, respectively. The required equalization volumes are 97,560 gallons, 192,240 gallons, and 421,200 gallons, respectively. Additional storage, production capacity, booster pumping or a combination of each would need to be added to the City of Kalispell water system to meet the requirements for equalization and a 4-hour, 4000 gpm fire.

Table 4.23 summarizes existing storage and production capacity, required storage and production capacity, and deficiencies under the Scenario 3 conditions.

Table 4.23 Scenario 3 Storage and Production Capacity Deficiencies

Upper Zone Storage Capacity (gallons)	*Production Capacity (gpm, Firm)*	*Design Period*	*Required Upper Zone Storage Capacity[3] (gallons)*	*Required Production Capacity (gpm, Firm)*	*Upper Zone Storage Deficiency (gallons)*	*Production Deficiency (gpm)*
100,000	3,800 (2,200)[1]	0 –5 years 5–10 years 10-20 years	933,300[2] 1,012,200 1,226,400	1,671 1,934 2,570	833,300 912,200 1,126,400	0 0 (370)[1]

1 Emergency production capacity
2 Storage volume required to meet a 4 -hour fire flow of 4000 gpm and equalization volume equal to 25% of the max day demand adjusted for emergency production capacity.
3Increasing the production capacity of the system would reduce the amount of storage capacity required.

Scenario 4 Impact Evaluation

The factors for fire demand and maximum daily demand are summarized in Table 4.24.

Table 4.24 Water Demand Conditions – Scenario 4

Phase	Maximum Day Demand (gpm)	Fire Demand (gpm)
0-5 years	512	4000[1]
5-10 years	1225	4000
10-20 years	1815	4000

[1] Based on requirements of 4000 gpm for the proposed high school

A four-hour duration fire in Section 36 during the maximum day demand period under the Scenario 4 conditions would require water volumes of 1,082,880 gallons, 1,254,000 gallons, and 1,395,600 gallons, respectively. The required equalization volumes are 184,320 gallons, 441,000 gallons, and 653,400 gallons respectively. Additional storage, production capacity, booster pumping or a combination of each would need to be added to the City of Kalispell water system to meet requirements for equalization and a 4-hour, 4000 gpm fire.

Table 4.25 summarizes existing storage and production capacity, required storage and production capacity, and deficiencies under the Scenario 4 conditions.

Table 4.25 Scenario 4 Storage and Production Capacity Deficiencies

Upper Zone Storage Capacity (gallons)	*Production Capacity (gpm, Firm)*	*Design Period*	*Required Upper Zone Storage Capacity[3] (gallons)*	*Required Production Capacity (gpm, Firm)*	*Upper Zone Storage Deficiency (gallons)*	*Production Deficiency (gpm)*
100,000	3,800 (2,200)[1]	0-5 years	1,005,600[2]	1,912	905,600	0
		5-10 years	1,266,000	2,625	1,166,000	(425)[1]
		10-20 years	2,262,480	3,215	2,162,480	(1,015)[1]

1Emergency production capacity
2 Storage volume required to meet a 4 -hour fire flow of 4000 gpm and equalization equal to 25% of the max day demand adjusted for emergency production capacity.
3 Increasing the production capacity of the system would reduce the amount of storage capacity required.

Upper Pressure Zone Total 2020 Growth Impact Evaluation

Data presented in Tables 4.11, 4.12, 4.13, and 4.14 does not take into consideration impacts of growth in the upper pressure zone outside of Section 36. These impacts must be identified to adequately size expansion of the Kalispell water system and to evaluate the contribution to total system impact of Section 36.

The Kalispell Facility Plan 2000 estimates an additional 2020 residential population of 7,750 and an additional 2020 commercial population of 6,026 in the upper pressure zone outside of Section 36. Tables 4.26, 4.27, 4.28 and 4.29 summarize total population and employment, and water demand data for the upper pressure zone under 2020 conditions including Section 36 growth scenarios 1, 2, 3, and 4 combined with estimated growth in the upper zone outside of Section 36.

Table 4.26 Upper Pressure Zone Scenario 1 Water Demand Projections

Scenario 1	Phase
	10-20 Years
Residential Population	7,750
Residential Demand Factor (god per capita)	131
Calculated Residential Demand (gpd)	1,015,250
Commercial Population†	6,576
Commercial Demand Factor (gpd per capita)	60
Calculated Commercial Demand (gpd)	394,560
Total Average Day Demand (gpd)	1,409,810
Maximum Day Demand (gpd)	3,806,487
Peak Hour Demand (gpd)	5,639,240

† Commercial population includes employment, recreation, student and motel.

Table 4.27 Upper Pressure Zone Scenario 2 Water Demand Projections

Scenario 2	Phase
	10-20 Years
Residential Population	9,320
Residential Demand Factor (gpd per capita)	131
Calculated Residential Demand (gpd)	1,220,920
Commercial Population†	11,562
Commercial Demand Factor (gpd per capita)	60
Calculated Commercial Demand (gpd)	693,720
Total Average Day Demand (gpd)	1,914,640
Maximum Day Demand (gpd)	5,169,528
Peak Hour Demand (gpd)	7,658,560

† Commercial population includes employment, recreation, student and motel.

Table 4.28 Upper Pressure Zone Scenario 3 Water Demand Projections

Scenario 3	Phase
	10-20 Years
Residential Population	9,310
Residential Demand Factor (gpd per capita)	131
Calculated Residential Demand (gpd)	1,219,610
Commercial Population[1]	13,019
Commercial Demand Factor (gpd per capita)	60
Calculated Commercial Demand (gpd)	781,140
Total Average Day Demand (gpd)	2,000,750
Maximum Day Demand (gpd)	5,402,025
Peak Hour Demand (gpd)	8,003,000

[1] Commercial population includes employment, recreation, student and motel.

Table 4.29 Upper Pressure Zone Scenario 4 Water Demand Projections

Scenario 4	Phase
	10-20 Years
Residential Population	12,765
Residential Demand Factor (gpd per capita)	131
Calculated Residential Demand (gpd)	1,672,215
Commercial Population[1]	18,265
Commercial Demand Factor (gpd per capita)	60
Calculated Commercial Demand (gpd)	1,095,900
Total Average Day Demand (gpd)	2,768,115
Maximum Day Demand (gpd)	7,473,910
Peak Hour Demand (gpd)	11,072,460

[1] Commercial population includes employment, recreation, student and motel.

The factors for fire demand and maximum daily demand are summarized in Table 3-22.

Table 4.30 Upper Pressure Zone Water Demand Conditions - 2020

Scenario	Maximum Day Demand[2] (gpm)	Fire Demand (gpm)
Scenario 1	2,643	2,000
Scenario 2	3,590	4000[1]
Scenario 3	3,751	4000[1]
Scenario 4	5,190	4000[1]

[1] Based on requirements of 4000 gpm for the high school

[2] Doesn't include existing upper pressure zone demand of 1,400 gpm

A four hour duration fire in the upper pressure zone during the maximum day demand period under the Scenario 1 2020 conditions would require a water volume of 1,114,320 gallons. The required equalization volume is 951,000 gallons. Additional storage, production capacity, booster pumping or a combination of each would need to be added to the City of Kalispell water system to meet requirements for equalization and a 4-hour, 2000 gpm fire. It should be noted that the requirements for developing Section 36 under Scenario 1 add minimally to the production and storage requirements of the existing upper pressure zone.

Table 4.31 summarizes existing storage and production capacity, required storage and production capacity, and deficiencies under Scenario 1 2020 conditions for the upper pressure zone.

Table 4.31 Scenario 1 Storage and Production Capacity Deficiencies - 2020

Upper Zone Storage Capacity (gallons)	*Production Capacity (gpm, Firm)*	*Required Upper Zone Storage Capacity[4] (gallons)*	*Required Production Capacity[4] (gpm, Firm)*	*Upper Zone Storage Deficiency (gallons)*	*Production Deficiency (gpm)*
100,000	3,800 (2,200)[1]	2,286,960[2]	4043	2,186,960	243 (1,843)[1]

[1] Emergency production capacity
[2] Storage volume required to meet a 4 -hour fire flow of 4000 gpm and equalization equal to 25% of the max day demand adjusted for emergency production capacity.
[3] Increasing the production capacity of the system would reduce the amount of storage capacity required.
[4] Includes existing upper pressure zone demand

A four-hour duration fire in the upper pressure zone during the maximum day demand period under the Scenario 2 2020 conditions would require a water volume of 1,821,600 gallons. The required equalization volume is 1,292,400 gallons. Additional storage, production capacity, booster pumping or a combination of each would need to be added to the City of Kalispell water system to meet requirements for equalization and a 4-hour, 4000 gpm fire.

Table 4.32 summarizes existing storage and production capacity, required storage and production capacity, and deficiencies under the Scenario 2 2020 conditions for the upper pressure zone.

Table 4.32 Scenario 2 Storage and Production Capacity Deficiencies - 2020

Upper Zone Storage Capacity (gallons)	*Production Capacity (gpm, Firm)*	*Required Upper Zone Storage Capacity[4] (gallons)*	*Required Production Capacity[4] (gpm, Firm)*	*Upper Zone Storage Deficiency (gallons)*	*Production Deficiency (gpm)*
100,000	3,800 (2,200)[1]	2,968,800[2]	4,990	2,868,800	1,190 (2,790)[1]

1Emergency production capacity
2 Storage volume required to meet a 4 -hour fire flow of 4000 gpm and equalization equal to 25% of the max day demand adjusted for emergency production capacity.
3 Increasing the production capacity of the system would reduce the amount of storage ca pacity required.
[4] Includes existing upper pressure zone demand

A four-hour duration fire in the upper pressures zone during the maximum day demand period under Scenario 3 and 2020 conditions would require a water volume of 1,860,240 gallons. The required equalization volume is 1,350,360 gallons. Additional storage, production capacity, booster pumping or a combination of each would need to be added to the City of Kalispell water system to meet requirements for equalization and a 4-hour, 4000 gpm fire.

Table 4.33 summarizes existing storage and production capacity, required storage and production capacity, and deficiencies under the Scenario 3 and 2020 conditions for the upper pressure zone.

Table 4.33 Scenario 3 Storage and Production Capacity Deficiencies - 2020

Upper Zone Storage Capacity (gallons)	*Production Capacity (gpm, Firm)*	*Required Upper Zone Storage Capacity[4] (gallons)*	*Required Production Capacity[4] (gpm, Firm)*	*Upper Zone Storage Deficiency (gallons)*	*Production Deficiency (gpm)*
100,000	3,800 (2,200)[1]	3,084,720[2]	5,151	2,984,720	1,351 (2,951)[1]

1Emergency production capacity
2 Storage volume required to meet a 4 -hour fire flow of 4000 gpm and equalization equal to 25% of the max day demand adjusted for emergency production capacity.
3 Increasing the production capacity of the system would reduce the amount of storage capacity required.
[4] Includes existing upper pressure zone demand

A four-hour duration fire in the upper pressures zone during the maximum day demand period under the Scenario 4 and 2020 conditions would require a water volume of 2,205,600 gallons. The required equalization volume is 1,868,400 gallons. Additional storage, production capacity, booster pumping or a combination of each would need to be added to the City of Kalispell water system to meet requirements for equalization and a 4-hour, 4000 gpm fire.

Table 4.34 summarizes existing storage and production capacity, required storage and production capacity, and deficiencies under the Scenario 4 and 2020 conditions for the upper pressure zone.

Table 4.34 Scenario 4 Storage and Production Capacity Deficiencies 2020

Upper Zone Storage Capacity (gallons)	*Production Capacity (gpm, Firm)*	*Required Upper Zone Storage Capacity[4] (gallons)*	*Required Production Capacity[4] (gpm, Firm)*	*Upper Zone Storage Deficiency (gallons)*	*Production Deficiency (gpm)*
100,000	3,800 (2,200)[1]	4,120,800[2]	6,590	4,020,800	2,790 (4,390)[1]

1Emergency production capacity
2 Storage volume required to meet a 4 -hour fire flow of 4000 gpm and equal ization equal to 25% of the max day demand adjusted for emergency production capacity.
3 Increasing the production capacity of the system would reduce the amount of storage capacity required.
[4] Includes existing upper pressure zone demand

The percentages of contribution to demand that Section 36 has on the upper pressure zone under Scenarios 1, 2, 3, and D4are tabulated in Table 4.35.

Table 4.35 Section 36 Contribution to Demand

Scenario	Percentage of Upper Pressure Zone Demand
1	2%
2	20%
3	23%
4	28%

4.3.3.3 Independent Section 36 Water System

Construction of an independent water system to serve development in Section 36 was analyzed based on the evaluation criteria found in Table 4.10 and the population, employment, and water demand data presented in Tables 4.12, 4.13 and 4.12 for scenarios 2, 3, and 4. It is not considered practical to build an independent water system for Scenario 1.

Development of a water system for Section 36 would, at a minimum, need to meet the requirements of Circular DEQ 1 – Standards for Water Works. For purposes of evaluation we will assume that the source of supply will be groundwater wells and that the system will be designed to meet a 4000 gpm, 4-hour fire for the proposed High School under Scenarios 2, 3, and 4. DEQ 1 requires that the capacity of the source of supply, if groundwater, be sized to exceed the maximum day demand and equal or exceed the design average day demand with the largest producing well out of service. A minimum of two sources of groundwater must be provided. If power failure will result in cessation of minimum essential service, sufficient standby power must be provided to meet average day demand. Storage facilities must have sufficient capacity, as determined from engineering studies, to meet domestic demands, and where fire protection is provided, fire flow demands. Table 4.36 outlines the requirements for storage and supply for Scenarios 2, 3, and 4.

Table 4.36 Section 36 Water System Storage and Supply Requirements

Scenario	Total Supply Capacity (gpm)	Firm Supply Capacity (gpm)	Equalization Storage (gallons)	Fire Protection Storage (gallons)	Total Storage (gallons)[1]	Production Volume (gpm)[2]
B						
0-5 years	252	93	90,720	960,000	1,050,720	4,252
5-10 years	510	189	183,600	960.000	1,143,360	4,510
10-20 years	1008	373	362,880	960,000	1,322,880	5,008
C						
0-5 years	271	100	97,686	960,000	1,057,686	4,271
5-10 years	534	205	192,368	960,000	1,152,368	4,534
10-20years	1170	433	421,595	960,000	1,381,595	5,170
D						
0-5 years	512	190	184,427	960,000	192,607	4,512
5-10 years	1225	454	440,940	960,000	1,400,940	5,225
10-20 years	1815	966	653,400	960,000	1,899,131	5,815

[1]Storage volume may be decreased if additional firm supply capacity is provided with standby power.

[2]Volume of water production required if no storage is provided .

Supply alone could be used, however O&M costs are significantly more over the life of the infrastructure.

4.3.3.4 Kalispell Water System Expansion Alternatives

The existing Kalispell water system upper pressure zone is deficient in meeting some of the criteria for service to Section 36 under all scenarios except 1. The alternatives available for upgrading the system are described below.

Scenario 1 Alternatives

The City of Kalispell's existing system would meet the requirements for Section 36 water demand under Scenario 1.

Scenario 2 Alternatives

The existing Kalispell water system upper pressure zone is deficient in meeting the required fire demand under all phases of expansion and cannot keep pace with maximum daily demand under emergency conditions for the Scenario 2 10-20 year design period. Improving the standby power at the existing booster pumping station would alleviate the shortfall in emergency production capacity in the Scenario 2 10-20 year design period. Increased storage or production capacity or a combination of each could be used to meet fire demands. Table 4.37 outlines the alternatives for upgrading the system to meet the preferred alternative Scenario 3onditions.

Table 4.37 Scenario 2 Alternatives

Alternative Description	*Additional Storage Capacity (gallons)*	*Additional Upper Zone Production Capacity (gpm)*	*Cost of Alternative*[2]
Add booster pumping standby power	670,400	1,600	$736,000
Place Grandview Well No. 2 in Service	862,400	800	$745,920[1]
Utilize DNRC Section 36 Well for Public Water Service[3]	622,400	1,800	$633,920
Add Upper zone Storage	1,009,760	0	$807,808
Add booster pumping standby power, utilize DNRC Section 36 well, and add storage	238,400	3,400	$526,720
Add booster pumping standby power, utilize DNRC Section 36 well, place Grandview well in service and add storage	46,400	4,200	$429,120[1]

1Placing the Grandview well in service may not be acceptable to the City of Kalispell.
2Cost of alternatives may be shared between stakeholders including, Section 36 development, City of Kalispell, and other development in the service area. Costs do not include transmission mains for water distribution.
3 Cost for this alternative includes adding a small well for irrigation
4Data is based on 2020 build-out.

Scenario 2 Recommendations

The most cost effective alternative for providing service to section 36 would be adding booster pumping standby power, utilizing the Section 36 well for public drinking water, and utilizing Grandview Well No. 2. Grandview Well No. 2 is not in use due to iron bacteria and sand. The City of Kalispell will most likely not allow it to go into service. Taking this into consideration, it is recommended that standby power be upgraded at the existing booster pumping station, the Section 36 well be used for public drinking water (another irrigation source would need to be developed) and additional storage be constructed.

Scenario 3 Alternatives

The existing Kalispell water system upper pressure zone is deficient in meeting the required fire demand under all phases of expansion and cannot keep pace with maximum daily demand under emergency conditions for the Scenario 3 10-20 year design period. Improving the standby power at the existing booster pumping station would alleviate the shortfall in emergency production capacity in the 10-20 year design period. Increased storage or production capacity or a combination of each could be used to meet fire demands. Table 4.38 outlines the alternatives for upgrading the system to meet the Scenario 3 conditions.

Table 4.38 Scenario 3 Alternatives

Alternative Description	*Additional Storage Capacity (gallons)*	*Additional Upper Zone Production Capacity (gpm)*	*Cost of Alternative*[2]
Add booster pumping standby power	719,000	1,600	$775,200
Place Grandview Well No. 2 in Service	911,000	800	$784,800[1]
Utilize DNRC Section 36 Well for Public Water Service[3]	671,000	1,800	$672,800
Add Upper zone Storage	1,126,400	0	$901,120
Add booster pumping standby power, utilize DNRC Section 36 well, and add storage	287,000	3,400	$565,600
Add booster pumping standby power, utilize DNRC Section 36 well, place Grandview well in service and add storage	95,000	4,200	$468,000[1]

1Placing the Grandview well in service may not be acceptab le to the City of Kalispell.
2Cost of alternatives may be shared between stakeholders including, Section 36 development, City of Kalispell, and other development in the service area. Costs do not include transmission mains for water distribution.
3 Cost for this alternative includes adding a small well for irrigation
4 Data is based on 2020 build-out.

Scenario 3 Recommendations

The most cost effective alternative for providing service to section 36 would be adding booster pumping standby power, utilizing the Section 36 well for public drinking water, and utilizing Grandview Well No. 2. Grandview Well No. 2 is not in use due to iron bacteria and sand. The City of Kalispell will most likely not allow it to go into service. Taking this into consideration, it is recommended that standby power be upgraded at the existing booster pumping station, the Section 36 well be used for public drinking water (another irrigation source would need to be developed) and additional storage be constructed.

Scenario 4 Alternatives

The existing Kalispell water system upper pressure zone is deficient in meeting the required fire demand under all phases of expansion and cannot keep pace with maximum daily demand under emergency conditions for the Scenario 4 5-10 and 10-20 year design periods. Improving the standby power at the existing booster pumping station would alleviate the shortfall in emergency production capacity in the 5-10 and 10-20 year design periods. Increased storage or production capacity or a combination of each could be used to meet fire demands. Table 4.39 outlines the alternatives for upgrading the system to meet the Scenario 4 conditions.

Table 4.39 Scenario 4 Alternatives

Alternative Description	*Additional Storage Capacity (gallons)*	*Additional Upper Zone Production Capacity (gpm)*	*Cost of Alternative*[2]
Add booster pumping standby power	1,010,480	1,600	$1,088,384
Place Grandview Well No. 2 in Service	1,586,480	800	$1,405,184[1]
Utilize DNRC Section 36 Well for Public Water Service[3]	1,102,700	1,800	$1,018,160
Add Upper zone Storage	2,162,480	0	$1,729,984
Add booster pumping standby power, utilize DNRC Section 36 well, and add storage	718,700	3,400	$990,960
Add booster pumping standby power, utilize DNRC Section 36 well, place Grandview well in service and add storage	526,700	4,200	$813,360[1]

1Placing the Grandview well in service may not be acceptable to the City of Kalispell.
2Cost of alternatives may be shared between stakeholders including, Section 36 development, City of Kalispell, and other development in the service area. Costs do not include transmission mains for water distribution.
3 Cost for this alternative includes adding a small well for irrigation
4 Data is based on 2020 build-out.

Scenario 4 Recommendations

The most cost effective alternative for providing service to section 36 would be adding booster pumping standby power, utilizing the Section 36 well for public drinking water, and utilizing Grandview Well No. 2. Grandview Well No. 2 is not in use due to iron bacteria and sand. The City of Kalispell will most likely not allow it to go into service. Taking this into consideration, it is recommended that standby power be upgraded at the existing booster pumping station, the Section 36 well be used for public drinking water (another irrigation source would need to be developed) and additional storage be constructed.

Upper Pressure Zone Total 2020 Growth Alternatives

In order to assess the comparative impacts of Section 36 development with the potential development of the entire Kalispell water system upper pressure zone, alternatives for 2020 build-out of the upper pressure zone under Scenarios 1, 2, 3, and 4 were analyzed.

2020 Build-out Scenario 1 Alternatives

The existing Kalispell water system upper pressure zone is deficient in meeting the required fire demand, production capacity and storage. Improving the standby power at the existing booster pumping station, increased storage, and additional production capacity

will be required to meet the demands. Table 4.40 outlines the alternatives for upgrading the system to meet the 2020 build-out Scenario 1 conditions.

Table 4.40 2020 Build-out Scenario 1 Alternatives

Alternative Description	*Additional Storage Capacity (gallons)*	*Additional Upper Zone Production Capacity (gpm)*	*Cost of Alternative*[2]
Add booster pumping standby power	1,034,960	1,600	$1,027,968
Place Grandview Well No. 2 in Service	1,610,960	800	$1,026,320[1]
Utilize DNRC Section 36 Well for Public Water Service[3]	1,112,900	1,800	$1,026,320
Add Upper zone Storage	2,186,960	0	$1,749,568
Add booster pumping standby power, utilize DNRC Section 36 well, and add storage	728,900	3,400	$919,120
Add booster pumping standby power, utilize DNRC Section 36 well, place Grandview well in service and add storage	536,900	4,200	$821,520[1]
Add booster pumping standby power, utilize DNRC Section 36 well, and add one 1,600 gpm production well	344,900	5,000	$1,123,920

1Placing the Grandview well in service may not be acceptable to the City of Kalispell.
2Cost of alternatives may be sh ared between stakeholders including, Section 36 development, City of Kalispell, and other development in the service area. Costs do not include transmission mains for water distribution.
3 Cost for this alternative includes adding a small well for irrigat ion

2020 Build-out Scenario 1 Recommendations

The most cost effective alternative for providing service to section 36 would be adding booster pumping standby power, utilizing the Section 36 well for public drinking water, and utilizing Grandview Well No. 2. Grandview Well No. 2 is not in use due to iron bacteria and sand. The City of Kalispell will most likely not allow it to go into service. Taking this into consideration, it is recommended that standby power be upgraded at the existing booster pumping station, the Section 36 well be used for public drinking water (another irrigation source would need to be developed) and additional storage be constructed.

2020 Build-out Scenario 2 Alternatives

The existing Kalispell water system upper pressure zone is deficient in meeting the required fire demand, production capacity and storage. Improving the standby power at the existing booster pumping station, increased storage, and additional production capacity will be required to meet the demands. Table 4.41 outlines the alternatives for upgrading the system to meet the 2020 build-out Scenario 2 conditions.

Table 4.41 2020 Build-out Scenario 2 Alternatives

Alternative Description	*Additional Storage Capacity (gallons)*	Additional Upper Zone Production Capacity (gpm)	Cost of Alternative[2]
Add booster pumping standby power	1,716,800	1,600	$1,573,440
Place Grandview Well No. 2 in Service	2,292,800	800	$1,890,240[1]
Utilize DNRC Section 36 Well for Public Water Service[3]	1,572,800	1,800	$1,394,240
Add Upper zone Storage	2,868,800	0	$2,295,040
Add booster pumping standby power, utilize DNRC Section 36 well, and add storage	1,013,000	3,400	$1,146,400
Add booster pumping standby power, utilize DNRC Section 36 well, place Grandview well in service and add storage	821,000	4,200	$1,048,800[1]
Add booster pumping standby power, utilize DNRC Section 36 well, and add one 1,600 gpm production well	629,000	5,000	$1,351,200

1Placing the Grandview well in service may not be acceptable to the City of Kalispell.
2Cost of alternatives may be shared between stakeholders including, Section 36 development, City of Kalispell, and other development in the service area. Costs do not include transmission mains for water distribution.
3 Cost for this alternative includes adding a small well for irrigation

2020 Build-out Scenario 2 Recommendations

The most cost effective alternative for providing service to section 36 would be adding booster pumping standby power, utilizing the Section 36 well for public drinking water, and utilizing Grandview Well No. 2. Grandview Well No. 2 is not in use due to iron bacteria and sand. The City of Kalispell will most likely not allow it to go into service. Taking this into consideration, it is recommended that standby power be upgraded at the existing booster pumping station, the Section 36 well be used for public drinking water (another irrigation source would need to be developed) and additional storage be constructed.

2020 Build-out Scenario 3 Alternatives

The existing Kalispell water system upper pressure zone is deficient in meeting the required fire demand, production capacity and storage. Improving the standby power at the existing booster pumping station, increased storage, and additional production capacity will be required to meet the demands. Table 4.42 outlines the alternatives for upgrading the system to meet the 2020 build-out Scenario 3 conditions.

Table 4.42 2020 Build-out Scenario 3 Alternatives

Alternative Description	Additional Storage Capacity (gallons)	Additional Upper Zone Production Capacity (gpm)	Cost of Alternative[2]
Add booster pumping standby power	1,832,720	1,600	$1,666,176
Place Grandview Well No. 2 in Service	2,408,720	800	$1,982,976[1]
Utilize DNRC Section 36 Well for Public Water Service[3]	1,688,720	1,800	$1,486,976
Add Upper zone Storage	2,984,720	0	$2,387,776
Add booster pumping standby power, utilize DNRC Section 36 well, and add storage	1,061,300	3,400	$1,185,040
Add booster pumping standby power, utilize DNRC Section 36 well, place Grandview well in service and add storage	869,300	4,200	$1,087,440[1]
Add booster pumping standby power, utilize DNRC Section 36 well, and add one 1,600 gpm production well	677,300	5,000	$1,389,840

1Placing the Grandview well in service may not be acceptable to the City of Kal ispell.
2Cost of alternatives may be shared between stakeholders including, Section 36 development, City of Kalispell, and other development in the service area. Costs do not include transmission mains for water distribution.
3 Cost for this alternative includes adding a small well for irrigation

2020 Build-out Scenario 3 Recommendations

The most cost effective alternative for providing service to section 36 would be adding booster pumping standby power, utilizing the Section 36 well for public drinking water, and utilizing Grandview Well No. 2. Grandview Well No. 2 is not in use due to iron bacteria and sand. The City of Kalispell will most likely not allow it to go into service. Taking this into consideration, it is recommended that standby power be upgraded at the existing booster pumping station, the Section 36 well be used for public drinking water (another irrigation source would need to be developed) and additional storage be constructed.

2020 Build-out Scenario 4 Alternatives

The existing Kalispell water system upper pressure zone is deficient in meeting the required fire demand, production capacity and storage. Improving the standby power at the existing booster pumping station, increased storage, and additional production capacity will be required to meet the demands. Table 4.43 outlines the alternatives for upgrading the system to meet the 2020 build-out Scenario 4 conditions.

Table 4.43 2020 Build-out Scenario 4 Alternatives

Alternative Description	Additional Storage Capacity (gallons)	Additional Upper Zone Production Capacity (gpm)	Cost of Alternative[2]
Add booster pumping standby power	2,868,800	1,600	$2,495,040
Place Grandview Well No. 2 in Service	3,444,800	800	$2,811,840[1]
Utilize DNRC Section 36 Well for Public Water Service[3]	2,724,800	1,800	$2,315,840
Add Upper zone Storage	4,020,800	0	$3,216,640
Add booster pumping standby power, utilize DNRC Section 36 well, and add storage	1,572,800	3,400	$1,650,240
Add booster pumping standby power, utilize DNRC Section 36 well, place Grandview well in service and add storage	1,301,000	4,200	$1,432,800[1]
Add booster pumping standby power, utilize DNRC Section 36 well, and add one 1,600 gpm production well	1,109,000	5,000	$1,735,200

1Placing the Grandview well in service may not be acc eptable to the City of Kalispell.
2Cost of alternatives may be shared between stakeholders including, Section 36 development, City of Kalispell, and other development in the service area. Costs do not include transmission mains for water distribution.
3 Cost for this alternative includes adding a small well for irrigation

2020 Build-out Scenario 4 Recommendations

The most cost effective alternative for providing service to section 36 would be adding booster pumping standby power, utilizing the Section 36 well for public drinking water, and utilizing Grandview Well No. 2. Grandview Well No. 2 is not in use due to iron bacteria and sand. The City of Kalispell will most likely not allow it to go into service. Taking this into consideration, it is recommended that standby power be upgraded at the existing booster pumping station, the Section 36 well be used for public drinking water (another irrigation source would need to be developed) and additional storage be constructed.

4.3.3.5 Independent Section 36 Water System Alternatives

Storage and production capacity, or production capacity alone, will need to be added to meet DEQ 1 requirements for a public water system as outlined in Table 4.36. Scenarios 2, 3, and 4 alternatives are outlined in Tables 4.44, 4.45 and 4.46 below.

Table 4.44 Scenario 2 Alternatives

Alternative 1	Storage Capacity (gallons)	Production Capacity (gpm)	Cost of Alternative[2]
Utilize DNRC Section 36 Well for Public Water Service[1]		1,800	$236,000
Add additional production well sized only for average day demand		500	$400,000
Storage	710,480[2]		$426,240
Total Cost			*$1,062,240*
Alternative 2			
Utilize DNRC Section 36 well for Public Water Service[1]		1,800	$236,000
Add additional production well sized to minimize storage		1,800	$512,000
Storage	398,400[2]		$239,040
Total Cost			*$987,040*
Alternative 3			
Utilize DNRC Section 36 well for Public Water Service[1]		1,800	$236,000
Add additional production well		1,800	$512,000
Add additional production well		1,400	$512,000
Total Cost			*$1,260,000*

1Cost for this alternative includes adding a small well for irrigation
2 Volume required if power is provided at all wells

The costs outlined in Table 3-36 do not include transmission piping. It should also be noted that if a stand-alone water system were constructed in Section 36 operations and maintenance costs would be the responsibility of DNRC.

Scenario 2 Recommendations

Alternative 2 is recommended if an independent water system is constructed for Section 36.

Table 4.45 Scenario 3 Alternatives

Alternative 1	*Storage Capacity (gallons)*	*Production Capacity (gpm)*	*Cost of Alternative*[2]
Utilize DNRC Section 36 Well for Public Water Service[1]		1,800	$236,000
Add additional production well sized only for average day demand		500	$400,000
Storage	759,000[2]		$455,400
Total Cost			*$1,091,400*
Alternative 2			
Utilize DNRC Section 36 well for Public Water Service[1]		1,800	$236,000
Add additional production well sized to minimize storage		1,800	$512,000
Storage	447,000[2]		$268,200
Total Cost			*$1,016,200*
Alternative 3			
Utilize DNRC Section 36 well for Public Water Service[1]		1,800	$236,000
Add additional production well		1,800	$512,000
Add additional production well		1,600	$512,000
Total Cost			*$1,260,000*

1Cost for this alternative includes adding a small well for irrigation
2 Volume required if emergency power is provided at all wells

The costs outlined in Table 4.45 do not include transmission piping. It should also be noted that if a stand-alone water system were constructed in Section 36 operations and maintenance costs would be the responsibility of DNRC.

Scenario 3 Recommendations

Alternative 2 is recommended if an independent water system is constructed for Section 36.

Table 4.46 Scenario 4 Alternatives

Alternative 1	Storage Capacity (gallons)	Production Capacity (gpm)	Cost of Alternative[2]
Utilize DNRC Section 36 Well for Public Water Service[1]		1,800	$236,000
Add additional production well sized only for average day demand		1000	$500,000
Storage	832,500[2]		$499,500
Total Cost			*$1,235,500*
Alternative 2			
Utilize DNRC Section 36 well for Public Water Service[1]		1,800	$236,000
Add additional production well sized to minimize storage		1,800	$512,000
Storage	640,500[2]		$384,300
Total Cost			*$1,132,300*
Alternative 3			
Utilize DNRC Section 36 well for Public Water Service1		1,800	$236,000
Add additional Production well		1,800	$512,000
Add additional production well		2,200	$512,000
Total Cost			*$1,260,000*

1Cost for this alternative includes adding a s mall well for irrigation
2 Volume required if emergency po wer is provided at all wells

The costs outlined in Table 3-38 do not include transmission piping. It should also be noted that if a stand-alone water system were constructed in Section 36 operations and maintenance costs would be the responsibility of DNRC.

Scenario 4 Recommendations

Alternative 2 is recommended if an independent water system is constructed for Section 36.

4.3.3.6 Relationship to Alternatives

The upper zone of the Kalispell water system has a current water storage deficiency. Under any of the action alternatives (B-E), this is an issue. Storage deficiency increases as development density increases as shown by the various development scenarios. The existing Kalispell water system is deficient in meeting the required fire demand under all action alternatives. Improvements to the system for all action alternatives would include (1) improving the stand-by power at the existing pumping station, (2) placing the Section 36 well now used for irrigation into service as a source of public drinking water, and (3) constructing additional storage. Costs for these improvements could range from 1.1 to 1.7 million dollars depending on ultimate build-out density and uses. In the situation of water needs, it would be more cost effective to encourage rapid infill of development since the improvement costs to the infrastructure are front-loaded.

4.3.4 Sewer Collection System

To help define the effects of development on sewage treatment and collection, 3 development scenarios (plus a status quo scenario) were used to help define the cause/effect relationships of development to sewage generation, delivery, and treatment. The development scenarios are not plan alternatives – just mechanisms to help identify and bracket the effects of development on sewer services. The results of the analysis will help to define the possible effects of a particular plan alternative.

4.3.4.1 Sewer Flow Analysis

In order to develop a sewer collection system plan, the existing wastewater flows and population data must be assessed to create per capita wastewater flow values. These values can then be used to estimate future wastewater flow rates for Section 36.

Flow Assignment

In order to develop a collection system plan, wastewater flows must be assigned to the system. System-wide flows have been estimated based on historical flow measurements at the Kalispell wastewater treatment plant and are reported in the draft Kalispell Facility Plan 2000 document. Table 4.47 summarizes recommended factors for modeling infiltration in the Kalispell wastewater collection system.

Table 4.47 Infiltration Flow Factors

Wastewater Collection System Condition	Flow Factor (gpd/acre)
Old construction with potential for groundwater (City core)	175
Existing system with modern construction and potential for groundwater (Green Acres)	185
New construction and existing system with low potential for groundwater	100[1]

1This is conservative compared to reported values to account for future deterio ration. A lower number may be necessary to calibrate the existing system model

Table 4.48 summarizes recommended factors for modeling peak inflow into the Kalispell wastewater collection system.

Table 4.48 Inflow Flow Factors

Wastewater Collection System Condition	Flow Factor (gpd/acre)
Old construction with connections to surface drainage (City Core)	1,800
Low lying areas subject to flooding (Green Acres)	800
New construction not subject to flooding	300

The calculated unit flow factors and wet weather flow factors are summarized in Table 4.49. These factors were used to calculate wastewater flows for existing and future development.

Table 4.49 Summary of Wastewater Flow Assignment Parameters

Residential sanitary flow factor (gpd/capita)	50
Commercial sanitary flow factor (gpd/employee)	20
Wet-weather infiltration (gpd/acre)	
Green Acres	185
City core	175
Areas of low I&I	100
Peak I/I (gpd/acre)	
Green Acres	800
City core	1800
Areas of low I&I	300

Projecting the parameters outlined in Table 4.49 and the population and employment projections developed in Section 2 – Basis of Planning onto Section 36 results in the sewer flow projections summarized in Table 4.50 for build-out scenarios 1, 2, 3, and 4.

Table 4.50 Projected Section 36 Sewer Flows

SCENARIO 2			
Design Condition	**0-5 years (gpd)**	**5-10 years (gpd)**	**10-20 years (gpd)**
Dry Weather Average	44,860	92,380	189,220
Dry Weather Peak Hour	64,150	132,103	270,585
Wet Weather Average	59,664	122,865	251,663
Design Max Day	104,524	215,245	335,980
Design Peak Hour	116,187	239,264	395,662
SCENARIO 3			
Design Condition	**0-5 years (gpd)**	**5-10 years (gpd)**	**10-20 years (gpd)**
Dry Weather Average	48,240	96,580	217,860
Dry Weather Peak Hour	69,134	138,411	312,220
Wet Weather Average	64,260	128,580	265,160
Design Max Day	112,240	224,580	409,860
Design Peak Hour	124,752	249,615	455,549
SCENARIO 4			
Design Condition	**0-5 years (gpd)**	**5-10 years (gpd)**	**10-20 years (gpd)**
Dry Weather Average	93,450	232,790	495,530
Dry Weather Peak Hour	133,925	333,616	710,154
Wet Weather Average	109,450	264,790	543,530
Design Max Day	157,450	360,790	687,530
Design Peak Hour	175,002	401,009	764,173

Data presented in Table 4.50 doesn't take into consideration sewer flow impacts to the collection system common to Section 36 and tributary areas outside of Section 36 i.e. the proposed development east of Highway 93 and the development that is occurring north of West Reserve Drive. Total sewer flow projections for Section 36 and these tributary areas are summarized in Table 4.51.

Table 4.51 Total Projected Sewer Flows

SCENARIO 2			
Design Condition	**0-5 years (gpd)**	**5-10 years (gpd)**	**10-20 years (gpd)**
Dry Weather Average	129,270	195,010	310,100
Dry Weather Peak Hour	185,120	279,185	443,821
Wet Weather Average	202,054	283,495	430,543
Design Max Day	420,934	549,875	688,860
Design Peak Hour	467,869	611,197	797,880
SCENARIO 3			
Design Condition	**0-5 years (gpd)**	**5-10 years (gpd)**	**10-20 years (gpd)**
Dry Weather Average	132,650	199,210	338,740
Dry Weather Peak Hour	190,104	285,493	485,456
Wet Weather Average	206,650	289,210	444.040
Design Max Day	428,650	559,210	762,740
Design Peak Hour	476,434	621,548	847,767
SCENARIO 4			
Design Condition	**0-5 years (gpd)**	**5-10 years (gpd)**	**10-20 years (gpd)**
Dry Weather Average	177,860	335,420	616,410
Dry Weather Peak Hour	254,895	480,698	883,390
Wet Weather Average	251,860	425,420	722,410
Design Max Day	473,860	695,420	1,040,410
Design Peak Hour	526,684	772,942	1,156,391

The percentage of contribution to sewer flow that Section 36 has on the wastewater collection and treatment system under Scenarios 1, 2, 3, and 4 are tabulated in Table 4.52.

Table 4.52 Section 36 Contribution to Sewer Flow

Scenario	Percentage of Sewer Flow[1]
B	61%
C	64%
D	80%

[1] Based on 2020 dry weather average year.

4.3.4.2 Options to Extend Sewer System

Two options were analyzed for extending the sewer collection system to meet the demands of future growth in Section 36 and the surrounding area. The first was construction of major gravity interceptors to collect sewage and transport it to regional lift stations. This option would allow many of the smaller existing lift stations to be eliminated. The second option is to continue to collect sewage in local drainage basins and then pump it to the core gravity system where it is transported to the wastewater treatment facility.

Gravity Interceptor Alternatives

A gravity interceptor could be constructed from the intersection of West Reserve Drive and Highway 93 generally following a route along the Stillwater River to a regional lift station located at the intersection of Whitefish Stage Road and the Stillwater River (Stillwater River interceptor). This alternative would allow elimination of Lift Stations 3, 9, 12, 13, and the proposed lift station in the northwest 1/4 of Section 31. A phased approach could be used to eliminate Lift Stations 3, 9, 12, and 13. The lift station proposed for the northwest ¼ of Section 31 would no longer be necessary.

Costs for the interceptor alternative is summarized in Table 4.53.

Table 4.53 Gravity Interceptor Alternatives

Alternative Description	Alternative Cost
Stillwater River Interceptor	$1,630,000

Costs associated with elimination of individual lift stations are summarized in Table 4.54.

Table 4.54 Lift Station Removal

Alternative Description	Alternative Cost
Lift Station 3 Removal	$165,000
Lift Station 9 Removal	$376,000
Lift Station 12 Removal	$278,000
Lift Station 13 Removal	$31,000

Pumped Options

Future growth could be served by collecting sewage in local drainage basins and pumping to the core gravity collection system.

Section 36 could be served by constructing collector sewers, interceptors, and lift stations where necessary to pump sewer flows to existing Lift Station No. 3 located at 4-Mile Drive and Highway 93. Lift station No. 3 would need to be upgraded to take flows under the conditions proposed by all of the phases under scenarios 2, 3, and 4. Improvements to gravity sewers downstream of Lift Station 3 will also be needed if it is to remain in service. Approximately 1,500 feet of 8-inch gravity sewer on Northridge Drive will need to be replaced with 12-inch pipe. Approximately 1,000 feet of 18-inch gravity sewer between 5th Avenue West and 7th Avenue West on 9th Street West will need to be replaced with 24-inch pipe.

Costs associated with construction of pumped alternatives and keeping existing pumping stations in service are summarized in Table 4.55.

Table 4.55 Pumped Alternatives

Alternative Description	Alternative Cost
Upgrade of Lift Station No. 3 and downstream piping	$315,000

[1]Cost to be shared by stakeholder and the City of Kalispell

Recommendations

Construction of the Stillwater River interceptor would allow the elimination of Lift Stations 3, 9, 12, and 13 reducing overall system operations and maintenance cost. The cost of constructing the interceptor is estimated at $1.6 million. Removal of lift stations to maximize the benefit of the interceptor would cost an additional $869,000 bringing the total cost of the project to $2.5 million. The cost of upgrading Lift Station No. 3 and the associated downstream piping is estimated at $315,000. Construction of the Stillwater River interceptor would most likely be cost prohibitive and would force development to look elsewhere for service. The pumped alternative is recommended.

4.3.4.3 Relationship to Alternatives

Except for Alternative A, sewer will need to be extended to Section 36. As with water extension to the property, the associated infrastructure improvements would be common to each of the action Alternatives and represent an up-front expense to upgrade the Grandview lift station. With this improvement, development of Section 36 could be accommodated under any of the plan Alternatives.

4.3.5 Population and Economy

Under action alternatives B, C, D, & E, buildings will be built, taxes will be paid, people will be employed, and lease payments will be returned to the school trust fund. This section attempts to describe the economic relationships to development of Section 36. Development scenarios 2, 3, and 4, as described in Section 2.3.1, form the basis for predicting economic relationships to development. Also included in this section is a fourth alternative that reflects a scenario based upon a job market analysis. The development scenarios are not plan alternatives – just mechanisms to help identify and bracket the effects of development on economic variables. The results of the analysis will help to define the possible effects of a particular plan alternative. In addition, a survey was conducted to help define the "downtown" perspective on new development in Section 36.

4.3.5.1 Assumptions and Limitations

The economic evaluation of "hypothetical" growth scenarios is a complicated endeavor for a variety of reasons. Assumptions would need to be made on the (1) type of use, (2) size of buildings, (3) number of related employees, (4) size of lease lot, (5) value of structure, (6) value of land, (7) location of use, (8) timing of development, and other considerations. Some of the assumptions of study are listed below.

Construction-Related Economic Impacts

The direct and indirect employment and payroll impacts of initial construction for the various build out scenarios are not modeled in this study. Construction related impacts are a one-time impact, and highly dependent on the quantity of local labor temporarily employed for the duration of the project.

Employment Projections for 2010, 2020

Employment projections, by Standard Industrial Classification (SIC) code, are projected based on analyses of past employment trends and projected population growth in the Flathead economy. Montana Department of Labor and Industry data are reported annually for employment by industry, by county. Employment trends are analyzed for the period 1990-1999. Population projections are based on Bureau of Business and Economic Research, University of Montana data for the benchmark years 2010 and 2020.

Employment Growth due to Section 36 Development

Employment growth due to the various build out scenarios is estimated using average square footage/employee, by SIC sector, obtained from a national consultant's study, and modified according to local parameters. Representative businesses were polled in the Flathead valley to adjust square footage/employee data. Build out options, specifying square footage, are used to apply square footage/employee ratios to project potential employee growth. Data include full and part time employees.

When necessary, employee allocation among multiple SIC sectors is accomplished using the relative proportion of each sector's 1999 employment to total employment

Benchmark Wages (Labor income)

Wages by SIC sector are derived from published data from the Montana Department of Labor and Industry. The latest available year is used in this study, 1999. Wages are assigned to sector activity in the model according to 2-digit SIC codes.

Wage Growth

Wage growth is projected over the 20 year planning horizon using historical trend analysis on real (inflation adjusted) wage growth for Flathead county, 1990-1999. Using the geometric mean method for averaging annual wage growth, and for all SIC sectors, wages increase in real terms by .16 percent, per year. Real wage growth represents increases above and beyond the rate of inflation. Real wage growth = (actual wage growth – inflation rate).

Discounting to Present Value

The planning horizon in this study is for the period 2001 to 2021. Since even modest inflation rates can distort data over longer periods of time, real interest is used to discount to present value (2001) dollars. Returns to U.S. Treasury bills (t-bills) were analyzed for the period 1990-1999, and adjusted for inflation as reflected in the Consumer Price Index (CPI-U) for the same period. Treasury bills are used for the interest to discount since these bills are generally thought to represent an inflation free investment risk. Discounting in real interest terms is also warranted since the growth in wages is in real terms. Present Value represents the sum of dollars today that, if invested in risk-free U.S. government bills, restores the future stream of income, whether that income be of wage derived sources, lease payments, land taxes, or taxes on structure.

Employment for the high school and elementary school build outs represents only the employment above and beyond the personnel that would relocate with the addition of a new school.

Employment for the Worship Center, recreational, personal care facilities, nursing homes, and agricultural build outs are obtained from the North American Industry Classification System (NAICS) reported in County Business Patterns. Using this data, employment is calculated according to the average number of employees per establishment.

Housing (apartments) are projected according to U.S. Census ratios in 1990 of occupied and unoccupied rental housing per capita. These ratios are extrapolated to 2000, 2010 and 2020. Projections are checked for margin of error using published data from Applied Geographical Solutions, Inc. for the benchmark year 2010. The margin of error between the study's estimates and that of Applied Geographical Solutions is less than 4 percent.

Wage and Employment Multipliers

Multipliers for wage and employment projections are obtained from an Input-Output (I0) model, IMPLAN, which uses national coefficients scaled to the county level to depict inter-industry relationships. Input-output multipliers are well established in the regional literature for impact analysis. Multipliers represent the successive rounds of economic activity resulting from an initial stimulus, and thus, are generally thought to represent a realistic measure of economy-wide impacts.

Development Pods

Four development pods are modeled; commercial, professional, residential, and agricultural, as specified in the Department of Natural Resources and Conservation document, Section 36 Initial Proposal and Scoping Document.

Development Time Frame

Build outs are modeled over the time period 2001-2021. Four periods are used, 2001, 2006, 2011, and 2021. Development per pod is assumed to occur in one of the four development time frames.

Taxes on Structure

Taxes on structures are determined according to tax assessments per square foot of building and the anticipated square footage of the development proposal. The real, effective tax rate is assumed

to be 2% of the market valuation. Taxes are static, and do not increase over the planning period. Taxes exclude special improvement assessments, increases due to improvements outside the structure, and personal property taxes (currently being phased out). Taxes do not escalate over the planning period due to the uncertainties surrounding future mill levies, city budgetary needs, taxable valuations, and the impact of special taxation treatment for industrial uses.

Taxes on Land

Taxes on land are based on $4/square foot for commercial, $3/square foot for professional, and $1/square foot for residential. Again, a real, effective tax rate of 2% is used. No taxes accrue to unimproved land.

The cost of providing city services to Section 36 is not considered in the scope of this study, nor are the indirect revenue streams associated with increased employment in the economy.

Lease Payments

Annual leases are 10% of sliding scale assessments for commercial, professional, and residential uses. For mixed commercial, lease payments to the State are assumed to be $1/square foot for the first planning year, $4/square foot for years 6-10, $6/square foot for years 11-20. Non-lot areas are leased at agricultural rates for the first ten years, and $1/square foot thereafter. For professional, leases are 10% of $0.40/square foot of lot for years 0-5, $1.50/square foot for years 6-10, and $4/square foot for the planning years 11-20. Non-lot areas are also assumed to lease at the agricultural rate for the first ten years, $0.40/square foot thereafter. For residential, leases are 10% of $0.20/square foot of lot area for years 0-5, $0.50/square foot for years 6-10, and $1/square foot thereafter. Non-lot areas are leased at agricultural rates, for the first 10 years, $0.20/square foot thereafter.

City leases for the ball field complex are assumed to be $37,955 per year, escalating at 1.5% per year thereafter. In year 19, the lease is renegotiated at $46,751.

The high school and elementary school purchase the land, and avoid lease payments.

Leasing for agricultural uses is to remain at historical levels, or $40/acre.

Square Footage Specifications, by Build out

The following square footage allowances are used for build out options by sector:

Motel	600 sq ft per room
Retirement center	650 sq ft per room
Nursing home room	600 sq ft per room
Apartments	900 sq ft per unit
Private school	54,000 sq ft for a student body of 300

Other Considerations

Historical trend analysis largely drives the model. Certainly other exogenous factors could conceivably influence the study's findings, such as the uncertainty surrounding the energy market. Columbia Falls Aluminum Company is temporary idled due to high energy costs, and consumers' budgets will be taxed as energy costs may escalate further. Development other than that on Section 36 is certain to occur as well over the planning period. Geographical proximity of similar businesses and the ability of the economy to accommodate the added sales and employment is also considered, but not directly modeled since uncertainties exist here as well.

4.3.5.2 Scenario 2

Table 4.56 summarizes the employment, by use, for this scenario. Only a few sectors appear to push the employment threshold levels whereby added employment in Section 36 may jeopardize employment elsewhere. Employment accommodation within the economy may be at risk in sector 59, miscellaneous retail, which includes business activity such as drug stores, jewelry stores, news dealers and newsstands, and gift, novelty and souvenir shops, to name but a few. Data suggest that delaying development until later in the planning period may be warranted in Sector 59. Sector 81, legal services, is also above the threshold level for both the 2010 and 2020 planning benchmarks. Engineering services, sector 87, may also warrant development later in the planning period to best accommodate growth within the regional economy.

Table 4.57 depicts the direct employment associated with full build out of the preferred development scenario. Over 1,100 jobs would be associated with this development. Using county employment multipliers for each sector, total employment could conceivably reach over 1,670 positions. Employment attributable to the technology park, and its subsequent additions, is excluded from these estimates.

Tables 4.58 through 4.60 present the projected revenues associated with structure taxes, land taxes and lease payments, again based on full build out of the scenario 2. Taxes and lease payments are presented by build out period, and by commercial, professional and residential development pods.

Table 4.56 Scenario 2

Sector	SIC	Avg. Sq. Ft/ Employee	New Employment	% of 2010 Employment	% of 2020 Employment
Phase I: 2001					
Agriculture	01		4		
Agriculture	01		4		
Agriculture	01		4		
Phase II: 2006					
Tech Park		300	320	na	na
Retail	53	268	50	72.0	56.1
	59		51	87.3	79.0
High School	82	na	25	79.2	63.2
Office (7,000)	73	300	23	70.5	56.0
Agriculture	01	na	4		
Phase III: 2011					
Tech Park		300	480		
Motel (131 units)	70	1316	60	85.8	77.5
Restaurant	58	88	69	79.3	68.3
Retail	53	268	50	76.5	59.7
	59		51	92.8	83.9
Convenience Store	54	430	16	72.0	58.0
Office (27,000)	73	300	90	75.3	59.8
Land Mng Agency			Relocation only		
Medical Clinic	80	276	76	78.7	67.2
Elementary School	82		13	84.2	67.2

Sector	SIC	Avg. Sq. Ft/ Employee	New Employment	% of 2010 Employment	% of 2020 Employment
School					
Apartments (100)		na	100 units	84.7	76.7
DNRC Buildings	73	300	90	80.0	63.5
Ice Rink	79	na	6		
Phase IV: 2021					
Tech Park		285	789		
Retail (54,000)	53	268	98	85.4	66.6
	59		103	103.7	93.8
Worship Center	86	na	6	76.9	65.1
Professional Office	81	300	65	120.8	110.6
	87		115	92.5	75.4
Retirement Center	83		36	83.2	68.3
Nursing Home	80		90	81.1	69.3
Apartments			400 units	88.6	80.3

Notes:
Employees for Agriculture, Worship Center, Retireme nt Center, and Nursing Homes based on average number of employees per establishment, by NAICS code, 1998 County Business Patterns.
Apartments are projected using 1990 census data on occupied and unoccupied rental units per capita, and projected for 2000, 2010, and 2020. Geographical Solutions Inc. also projects rental -housing units for 2010, and our estimate was within 4%. School data provided by the Superintendent of Public Instruction, and represents only those employees added to the payroll as a resu lt of new school buildings.

The proposed land management offices would represent a reallocation of existing employees and hence do not provide additional economic impact in the regional economy.

Average square footage per employee obtained by a local c ensus of retailers conducted in April, 2001. Where not available, consultant estmates were used by general one -digit SIC category.

The 88% threshold for total employees as a percent of the total employment base projected for 2010 and 2020 was adopted by the researchers as a safe threshold whereby new employment could be accommodated by the local economy without seriously compromising existing employment elsewhere. Although Kalispell serves as the local trade center, outlying areas are also experiencing gr owth and it is deemed undesirable to assume that employment growth in the region would occur only in the Kalispell area.

Table 4.57
Direct, Indirect and Induced Employment
Scenario 2

Sector	Total Direct Employment	Total Direct, Indirect & Induced Employment	Average Wage 2001 $
Agriculture	12	13	16,026
General Merchandise	198	249	16,735
Food Stores	16	19	16,975
Eating & Drinking	69	85	9,801
Miscellaneous Retail	205	231	15,046
Hotels and Lodging	60	82	13,512
Business Services	203	325	16,601
Amusement & Recreation	6	11	11,280
Health Services	166	294	28,349
Legal Services	65	101	52,734
Educational Services	38	54	16,028
Membership Organizations	6	12	12,133
Engineering Services	115	200	55,987
TOTAL	1,159	1,676	

Excludes technology park employment

Table 4.58
Present Value (2001 $) Taxes for Structure
Scenario 2

Year of Build Out	Commercial	Professional	Residential	TOTAL
2006-2010	1,253,869	131,709	0	1,385,578
2011-2020	2,107,031	742,105	1,068,690	3,917,826
2021	161,998	184,630	427,101	773,729
TOTAL	3,522,898	1,058,444	1,495,791	6,077,133

Table 4.59
Present Value (2001 $) Taxes for land
Scenario 2

Year of Build Out	Commercial	Professional	Residential	Land Purchase	TOTAL
2006-2010	590,119	9,834	0	815,158	1,415,111
2011-2020	656,364	1,361,888	214,033	178,672	2,410,957
2021	78,563	30,780	27,555	0	136,899
TOTAL	1,325,046	1,402,502	241,588	993,830	3,962,967

Table 4.60
Present Value (2001 $) of Lease Payments
Scenario 2

Year of Build Out	Commercial	Professional	Residential	Agricultural	TOTAL
2001-2005				846,475	846,475
2006-2010	327,842	24,586	0	183,841	536,268
2011-2020	1,070,164	3,728,451	1,070,164	0	5,868,780
2021	61,561	216,928	140,710	0	419,199
TOTAL	1,459,567	3,969,965	1,210,874	1,030,316	7,670,722

4.3.5.3 Scenario 3

Table 4.6.1 presents the estimated employment impacts of the various development options over the 20-year planning period, assuming full build out occurs. Employment projections for the benchmark years are based on the most recent employment data available and population projections for the county in 2010 and 2020. The technology park is not included in this table since demand for this sector is not driven by local or regional factors, and hence, would not directly impact the local economy's ability to accommodate employment and sales growth. Indirectly, however, the employment and sales associated with a high technology park would positively impact the local economy in terms of increased spending power by households. National and global factors account for the ability of the high technology park to generate expected employment and sales targets. Hence, the high technology park is addressed separately in this study.

Using the methodological approach and limitations addressed in the Assumptions and Limitations section of this report, and recognizing the uncertainty of alternative development elsewhere in Flathead county, the economy can accommodate most of the projected employment associated with the proposed build out of this scenario. Data and its analysis indicates that the regional economy may experience less difficulty in accommodating the proposed full build out scenarios as specified if delayed until closer to the 2020 year build out, or thereafter.

The model assumes that new development could reasonably be accommodated, based on historical growth in employment, at threshold levels less than 88 percent of the total employment projected for 2010 and 2020. An examination of Table 9 indicates that most development options meet this criterion for the benchmark year 2010. By the benchmark year 2020, the economy may even better accommodate Section 36 growth assuming new retail and service sector employment elsewhere in the valley do not push the threshold employment levels above 88 percent.

For SIC 52, Building Material, Garden and Hardware Supply (Retail Trade), the ability of the regional economy to accommodate added employment growth in Section 36 is influenced considerably by the proposed and soon to be built Home Depot. Employment at Home Depot, given the model's assumptions, is estimated at 208 full and part time employees. This, coupled with the extremely close geographical proximity of the retailer to Section 36, limits the ability of the economy to absorb added SIC 52 employment in Section 36 over the next ten years without affecting sales and employment for existing firms. Even without Section 36 development in SIC 52, threshold employment levels increase from 70% in 2010 to 96%, and for year 2020 increase from 56% to 77%. Other retail tenants associated with the Home Depot development will impact other retail build outs in Section 36, the extent to which is unknown.

Table 4.61 Development Scenario 3

Proposed Build Out	SIC	Employment in Section 36	% of Total Projected Employment – 2010	% of Total Projected Employment-2020
Phase 1: 0-5 Years				
Office Building	73	133	76.3	60.6
Retail Warehouse	52	61	77.7	62.1
	53	80	74.7	58.2
High School	82	25	79.2	63.2
Office Building	73	23	77.5	61.6
Phase II: 6-10 Years				
Motel	70	60	85.8	77.5
Dine-In Restaurant	58	34	78.3	67.4
Bank w Drive Thru	61	68	92.8	84.2
Gas-Convenience	54	16	72.0	58.0
Office Building	73	90	82.2	65.3
Professional Office	81	47	110.4	101.l
	87	133	133.0	78.0
Dental/Medical	80	76	78.7	67.2
Elementary School	82	13	84.2	67.2
Apartments		100 units	84.7	76.7
Phase III: 11-20 Years				
Home Office Supply	53	25	77.0	60.0
Restaurant-Drive Thru	58	34	79.3	64.1
Grocery Store	54	109	79.5	64.1
General Retail	52	45	83.2	66.5
	53	61	82.5	64.3
	59	62	88.6	80.0
Worship Center	86	6	76.9	65.1
Barber/Beauty Shop	72	12	85.9	77.9
Professional Office Park	81	52	140.5	128.6
	87	148	122.1	99.6
Retirement Center	83	36	78.0	64.0
Medical Complex	80	54	80.1	68.4
Convenience Mart	54	42	82.4	66.4
	59	32	91.9	83.1
Build Out	SIC	Number Emp.	% of 2010 Emp.	% of 2020 Emp.
Office Buildings	73	200	92.8	73.7
Car Wash	75	12	74.7	61.1
Private School	82	25	93.8	77.8
Sector	SIC	Employment	% of Total (2010)	% of Total (2020)
Equestrian Center	79	3	66.5	51.2
Recreation Center	79	3	66.8	51.4
Worship Center	86	6	78.1	66.1
Retirement Center	83	36	83.2	68.3
Nursing Home	80	90	82.5	70.5
Office-General	73	367	112.1	89.0
Apartments		400 units	88.6	80.3

Table 4.62 summarizes the total employment added if section 36 is developed according to the site specifications. Again, the technology park is temporarily omitted. Total direct jobs associated with Section 36 development are estimated at 2,338. Using county employment multipliers for each sector of economic activity, as specified in the IMPLAN input-output model, (Table 4.63) direct,

indirect and induced employment resulting from inter-industry county-wide linkages result in an employment gain of 3,593 for the economy. Average wages are depicted, in 2001 dollars, by major SIC category also in Table 4.62. Using a weighted average, wages are estimated at $24,158 per employee, per year. The three SIC's contributing most to employment include the health services sector, engineering services, and business services.

It should be noted that the modeling methodology and existing data provides only broad feasibility analyses at individual and specific industry (SIC) levels. Obviously, market and financial feasibility would need to be studied further according to the specific size, location, and timing of individual-firm specific build out proposals. Limitations of the modeling methodology are most evident due to the absence of sound historical data and industry specific trends for some of the firms specified in the proposed Section 36 build outs. Specifically, the car wash, equestrian center, worship centers, retirement centers and nursing homes, and the fire substation are difficult to model from a methodology using projected employment. Data only provides rough guidelines for considering these impacts.

Table 4.62 Total Direct, Indirect and Induced Employment

Sector	Total Direct	Total Direct, Indirect and Induced Employment	Average Wage 2001 Dollars
Agricultural Production-Crops & Livestock	16	17	$16,026
Building Materials & Garden Supply	106	138	$22,663
General Merchandise	166	209	$16,735
Food Stores	167	202	$16,975
Eating and Drinking	68	84	$9,801
Miscellaneous Retail	94	106	$15,046
Banking	68	171	$28,085
Hotels and Lodging	60	82	$13,512
Personal Services	12	17	$13,710
Business Services	813	1,301	$16,601
Auto Repair Services	12	13	$22,275
Amusement & Recreation	6	11	$11,280
Health Services	220	389	$28,349
Legal Services	99	154	$52,734
Educational Services	63	89	$16,028
Social Services	72	97	$14,352
Membership Organizations	12	24	$12,133
Engineering Services	281	489	$55,987
TOTAL	2,338	3,593	$24,158[5]

[5]Weighted Mean

TABLE 4.63 IMPLAN Base Employment and Income Multipliers By IMPLAN Sector
Flathead County

Sector	Sector Description	Employment	Labor Income
3	Range Fed Cattle	1.46	1.59
13	Hay & Pasture	1.06	1.21
448	Building Materials & Garden Supply	1.30	1.26
449	General Merchandise Stores	1.26	1.33
450	Food Stores	1.21	1.25
452	Apparel & Accessory Stores	1.18	1.38
453	Furniture & Home Furnishings	1.28	1.31
454	Eating & Drinking Places	1.24	1.45
455	Miscellaneous Retail	1.13	1.27
456	Banking	1.61	1.50
457	Credit Agencies	1.26	1.25
458	Security & Commodity Brokers	1.86	1.40
460	Insurance Agents/Brokers	1.29	1.27
462	Real Estate	1.63	2.13
463	Hotels and Lodging	1.36	1.55
465	Portrait & Photographic Studios	1.39	1.82
466	Beauty & Barber Shops	1.42	1.61
468	Miscellaneous Retail Services	1.67	2.86
470	Other Business Services	1.60	1.77
471	Commercial Photography	2.00	1.77
475	Computer & Data Processing Services	1.53	1.36
478	Car Wash	1.12	1.23
481	Watch and Jewelry Repair	1.29	1.64
485	Bowling Alleys	1.29	1.46
488	Amusement & Recreation Services	1.25	1.44
490	Doctors and Dentists	1.77	1.40
491	Nursing and Protection Care Services	1.35	1.32
493	Other Medical and Health Services	1.37	1.54
494	Legal Services	1.56	1.28
495	Elementary and Secondary Schools	1.41	2.33
501	Residential Care	1.29	1.28
506	Engineering & Architectural Services	1.74	1.83
507	Accounting/Auditing/Bookkeeping	1.19	1.24
522	State & Local Government-Education	1.27	1.18
523	State & Local Government-Non Education	1.35	1.18

Findings-Taxes on Land

Table 4.64 estimates the taxes paid to land for the full build out, Scenario 3. Taxes are projected for commercial, professional and residential pods, using the assumptions for taxes discussed in the Assumptions and Limitations section of this report. Data are presented as present value (2001 dollars), and assume build outs occur in 2006, 2011, and 2021. Data is summarized for taxes on land for commercial, professional, and residential uses. Total taxes on land, assuming full build out, amount to $23.8 million dollars. The mixed commercial pod accounts for 58 percent of total land taxes.

TABLE 4.64 Present Value: Projected Taxes on Land Scenario 3 2001 Dollars

Build Out Year	Commercial	Professional	Residential	Total PV
2001-05				
2006-10	$874,246	$9,834		$884,080
2011-20	$613,559	$142,115	$285,377	$1,041,052
2021	$87,710	$68,420	$31,074	$187,204
TOTAL	**$1,575,515**	**$220,369**	**$316,451**	**$2,112,336**

Findings-Taxes on Structure

Again, using the assumptions discussed in Assumptions and Limitations, Table 4.65 depicts the sector specific taxes paid for structures by (a) time period of build out and (b) type of use (commercial, professional, residential). Both the proposed development of a high school and elementary school involve land purchases in the date of development. The high school is assumed to purchase 80 acres at $15,000 acre, while the elementary school purchases 20 acres at $.25/square foot. Purchase prices are not escalated for inflation, but remain static. Table 4.65 summarizes the data in present value terms. Taxes paid to structures equal $412.4 million over the 20-year planning period. Again, commercial development accounts for over 60 percent of the tax obligations for structure. The total tax obligation assumes full build out.

Table 4.65 Present Value: Projected Taxes on Structure Development Scenario 3 2001 Dollars

Build Out Year	Commercial	Professional	Residential	Land Purchase	Total PV
2001-05					
2006-10	$2,890,847	$131,709		$1,086,877	$4,109,433
2011-20	$1,916,567	$1,675,673	$737,028	$178,672	$4,507,940
2021	$211,151	$121,549	$538,142		$870,842
TOTAL	**$5,018,565**	**$1,928,931**	**$1,275,170**	**$1,265,549**	**$9,488,215**

Findings-Lease Payment to State

Table 4.66 presents projections for total lease payments made to the State over the 20-year build out of Scenario 3, again reported in present value terms. The full build out of Scenario 3 would generate $18.1 million in lease payments (2001 dollars). Agricultural lease payments include the lease payments from the ball field complex, along with agricultural leasing of land in Section 36.

Table 4.66 Present Value: Projected Lease Payments Development Scenario 3

Build Out Year	Commercial	Professional	Residential	Agricultural	Total
2001-05				$846,475	$846,475
2006-10	$4,371,230	$24,586		$177,619	$4,573,435
2011-20	$4,601,706	$947,449	$713,443	$4,917,760	$11,180,358
2021	$657,820	$456,136	$155,368	$209,893	$1,479,217
TOTAL	**$9,630,756**	**$1,428,171**	**$868,811**	**$6,003,147**	**$18,079,485**

4.3.5.4 Case Study Example

Using the same methodological approach for the full build out of Scenario 3, the economic impact on the regional economy of a hypothetical build out phase in is assessed. The case study represents but one plausible build out option whereby the timing of build out and threshold levels of employment are consistent with the economy's ability to accommodate additional retail employment and sales growth.

Table 4.67 presents the employment and payroll impacts for a phased in build out illustration. Using this approach, whereby employment thresholds are held to within the 88% of total sector projected demand for 2010 and 2020, 17 build out options are modeled. As per the study's findings presented earlier in this report, most build out occurs later in the planning period. Employment is reduced substantially, from 2,338 jobs to 1,126. Note also that the latter estimate now includes the technology park. Payroll is estimated at $254.6 million in present value dollars, for direct, indirect and induced effects. Including the indirect and induced impacts for employment, total employment is reduced from 3,593 to 1,695.

The impact on taxes and lease payments is also considerable. Table 4.68 indicates that total lease payments, again in present value (2001 dollars) terms, would amount to $6.9 million, and taxes on structure and land $3.4 million and $.4 million respectively.

Comparing the revenue streams associated with the full build out and phased in build out modeled in the case study, lease payments are reduced by $11.2 million, from $18.1 million to $6.9 million. Similarly, taxes for structure are reduced from $9.5 million to $3.3 million, while taxes on land decrease from $2.1 million to $.4 million.

Other build out options are possible, but all suffer from the uncertainties surrounding retail and service sector growth elsewhere in the valley over the next 20 years and the limitations of reliable and timely data at the industry specific level.

Table 4.67 Representative Build Out Options Accommodated by Regional Growth in Present Values to 2001

Build Out Option	Year of Build Out	Direct Employment	Total Employment	Total Payroll Impact (000"s $)
Technology Park	2002	200	320	$96,519
Agricultural Use	2002	4	4	$1,225
High School	2003	25	32	$13,832
Elementary School	2006	13	17	$5,674
Office (40,000 sq ft)	2012	133	203	$22,677
Dental/Medical Clinic	2012	36	135	$22,779
Home Office Supply	2012	25	32	$4,202
Grocery Store	2012	109	132	$17,466
Office (7,000 sq ft)	2013	23	37	$4,499
Office (27,000 sq ft)	2014	90	144	$15,504
Office (60,000 sq ft)	2015	200	320	$28,295
Gas/Convenience Store	2016	26	31	$1,672
Motel	2016	60	82	$5,485
Medical Office Complex	2016	50	89	$8,663
Barber/Beauty Shop	2016	12	17	$1,156

Drive-Thru				
Restaurant	2016	11	14	$682
Dine-in				
Restaurant	2016	69	86	$4,274
TOTAL		**1126**	**1695**	**$254,604**

Table 4.68 Present Value of Leases, Structure and Land Taxes Phased-in Build out Scenario (000's $)

	Leases	Taxes on Structure	Taxes on Land
Present Value 2001 Dollars	$6,922	$3,357	$379

4.3.5.5 Scenario 4

Using the same methodological approach as was used in the previous scenarios. Scenario 3's findings indicate that the region's ability to accommodate employment gains is again evident. Table 4.69 shows that particularly in the shorter term until 2010, employment created by build out development can be accommodated in all but seven SIC categories. By 2020, employment may be accommodated assuming that additional employment elsewhere does not occur prior to the benchmark year. The benchmark employment percentage used is again 88% of the total projected.

Residential development in and around the area will positively impact the study's findings. Population growth contiguous to Section 36 could conceivably warrant build out in the retail and service sectors prior to 2020, particularly among sectors which are heavily influenced by contiguous population growth, such as convenience stores, grocery stores and restaurants. Although population will increase in and around Section 36 (Stillwater Estates alone will add 34 residential units), the development of the Home Depot retail pods will substantially impact development in Section 36. Higher energy costs will be manifest in reduced household discretionary spending.

Employment associated with the Scenario 4 build out is 77 percent greater than under Scenario 3. Approximately 4,100 employment positions would be created with Section 36 development, with an average wage almost 10 percent higher; $26,448 compared to $24,158 under Scenario 3.

Tables 4.70, 4.71, 4.72, and 4.73 summarize the tax revenue generated from structure, land and lease payments. Should the development proceed in the timeframe specified, and to the magnitude (square footage) specified, taxes for structure would amount to $18.1 million, taxes on land, $2.9 million, and lease payments $ million. Compared to Scenario 3 build out, taxes on land are $.8 million greater, taxes on structure are $8.6 greater, and lease payments are $1.6 million less than the Scenario 3. Further analysis of the lower lease payments reveals that loss of the high technology parks (3) contributed most to the decline in leasing revenues, along with less build out in the mixed residential in 2021. Also contributing is the greater non-lot acreage under this scenario, which is leased at lower agricultural rates.

Table 4.69 Employee Build Out Scenario 4

Build Out	SIC	% of Total Projected Employment 2010	% of Total Projected Employment 2020
Office	73	.74	.59
Discount Warehouse	52	.77	.62
	53	.91	.71
Discount Warehouse	52	.85	.68

	53	.99	.77
Restaurant	58	.79	.68
Grocery Store	54	.79	.63
Office Supply	53	1.01	.79
Restaurant	58	.80	.69
Professional Office	81	1.10	1.01
Complex	87	.96	.78
Apartments[5]		85.2	77.1
Bank	60	.94	.85
Motel	70	.85	.77
Retail Store	52	.93	.75
	53	1.10	.86
Bank	60	1.05	.95
Convenience Store	54	.80	.64
Office	73	.76	.61
Medical Clinic	80	.81	.69
Convenience Mart	54	.82	.66
	59	.78	.70
Barber/Beauty Shop	72	.86	.78
Apartments		.93	.84
Variable Office Space	73	.96	.76
Shopping Mall	56	3.09	3.69
	59	.85	.76
Restaurant	58	.82	.71
Restaurant	58	.84	.73
Bowling Alley	79	.68	.53
Visitor/Convention Facility	70	.92	.83
Specialty Retail Shops	52	1.03	.83
	53	1.20	.93
	59	.96	.87
Professional Office	81	1.71	1.56
Park	87	1.49	1.21
Professional Office	81	2.31	2.11
Park	87	2.01	1.64
Medical Office Complex	80	.84	.72
Office Buildings	73	1.06	.84
Car Wash	75	.77	.63
Private School	82	.89	.71
Apartments		1.00	.90

5 Apartments represent number of units as a percent of the total projected unit demand for apartments in 2010 and 2020.

Table 4.70 Total Direct, Indirect and Induced Employment- Scenario 4

Sector	Total Direct	Total Direct, Indirect and Induced Employment	Average Wage 2001
Veterinary Services	7	10	20,585
Agricultural Production	16	17	16,026
Building Materials & Garden Supply	269	350	22,663
General Merchandise	394	496	16,735
Food Stores	127	154	16,975
Eating & Drinking	256	316	9,801
Miscellaneous Retail	216	244	15,046
Banking	143	360	28,085
Hotels and Lodging	157	215	13,512
Personal Services	12	17	13,710
Business Services	791	1,266	16,601
Auto Repair Services	12	13	22,275
Amusement & Recreation	22	40	11,280
Health Services	272	481	28,349
Legal Services	255	397	52,734
Educational Services	50	71	16,028
Social Services	400	539	14,352
Membership Organizations	12	24	12,133
Engineering Services	725	1,262	55,987
TOTAL	**4,136**	**6,272**	**26,448**[7]

[7] Weighted Mean

Table 4.71 Present Value (2001 $) Taxes for Structure Scenario 4

Year of Build Out	Commercial	Professional	Residential	TOTAL
2006-2010	3,842,199	1,156,530	1,693,400	6,692,129
2011-2020	1,192,019	1,439,333	7,247,439	9,878,792
2021	383,163	599,191	513,107	1,495,461
TOTAL	5,417,381	3,195,054	9,453,946	18,066,382

Table 4.72 Present Value (2001 $) Taxes for Land Scenario 4

Year of Build Out	Commercial	Professional	Residential	Land Purchase	TOTAL
2006-2010	848,017	180,316	54,640	1,086,877	2,169,850
2011-2020	171,228	184,928	235,439		591,596
2021	85,599	83,547	19,348		188,493
TOTAL	1,104,844	448,791	309,427	1,086,877	2,949,939

Table 4.73 Present Value (2001 $) of Lease Payments Scenario 4

Year of Build Out	Commercial	Professional	Residential	Agricultural	TOTAL
2001-2005				846,475	846,475
2006-2010	4,240,098	450,783	136,601	172,652	5,000,134
2011-2020	1,284,197	1,232,826	1,212,853	5,377,936	9,107,812
2021	641,990	580,430	96,738	246,958	1,566,117
TOTAL	6,166,285	2,264,039	1,446,192	6,495,421	16,520,538

4.3.5.6 Build Out Comparisons

Table 4.74 summarizes the revenue streams associated with three of the build out scenarios examined in this report; Scenarios 2, 3, & 4.

The build out of Scenario 2 would generate $17.7 million (2001 $) in tax and leasing revenue. Leasing payments are lower than otherwise projected in the other scenarios due to the absence of lease payments for non-lot areas during the 2011-2021 period. Previously non-lot areas were leased on a per square foot basis, instead of the lower agricultural rates of $40/acre. For this development scenario, however, non-lot areas are not leased during the last ten years of the planning cycle.

Scenario 3, with 37 build outs, generates over $29.7 million (2001 $) in revenue. Again, leasing payments dominate this revenue stream accounting for 62 percent of the total revenue stream.

Data represent the taxes and lease payments projected for each development scenario, by time period. The largest fiscal impact is attributable to Scenario 4; with 40 different build outs specified. Over $37.5 million would be generated, in present value (2001 $), over the life of the project. The vast majority of this revenue comes from leasing and taxes on structure during the 2011-2020 time period.

Table 4.74 Build Out Comparisons

	2001-05	2006-2010	2011-20	2021	TOTAL
Scenario 2					
Taxes-Structure		1,385,578	3,917,826	773,729	6,077,133
Taxes-Land		1,415,111	2,410,957	136,899	3,962,967
Lease Payments	846,475	536,268	5,868,780	419,199	7,670,722
TOTAL	846,475	3,336,957	12,197,563	1,329,827	**17,710,822**
Scenario 3					
Taxes-Structure		4,109,433	4,507,940	870,842	9,488,215
Taxes-Land		884,080	1,041,052	187,204	2,112,336
Lease Payments	846,475	4,573,435	11,180,358	1,479,217	18,079,485
TOTAL	846,475	9,566,948	16,729,350	2,537,263	**29,680,036**
Scenario 4					
Taxes-Structure		6,692,129	9,878,792	1,495,461	18,066,382
Taxes-Land		2,169,850	591,596	188,493	2,949,939
Lease Payments	846,475	5,000,134	9,107,812	1,566,117	16,520,538
TOTAL	846,475	13,862,113	19,578,200	3,250,071	**37,536,859**

4.3.5.7 Downtown Merchants Survey

During the month of April, over 100 downtown Kalispell businesses, including Kalispell Center Mall tenants, were personally interviewed to solicit their perspectives on development in Section 36. Twenty-five different sectors were recorded. For the past 5 years, nearly all businesses report their employment base was stable to increasing. Businesses were also asked to assess the potential, and perceived impact, that development in Section 36 would have on their businesses. Business owners were given a wide array of potential business sectors, and asked to respond whether the perceived impact on their business would be adverse, no impact, positive, or uncertain. Results are presented in **Appendix I**, by SIC sector. Responses overwhelmingly suggest that for most businesses, development in Section 36 would in the worst-case scenario have no impact, and best-case scenario, positive impacts on their respective businesses.

Business owners were then asked if a business did locate in Section 36 that was in direct competition with their business, would the impact be significantly adverse, moderately adverse or modest, if any. Surprisingly, a majority of the businesses felt that the impact would be modest to moderately adverse, should a direct competitor locate a few miles away in Section 36.

Also appended are comments and business owners' perceptions as to who their direct competition is in the economy.

4.3.5.8 Relationship to Alternatives

Alternative A

Under this alternative, no additional employment or taxes will be generated from the property. Annual lease payments to the School Trust will reflect agricultural payments, which are not likely to exceed more than $40 per acre on an annual basis.

Alternative B

Any of the 4 development scenarios (2, 3, 4, & case study) could be examples of development scenarios within this Alternative. The one-time easement payment for the school sites could be delayed under this alternative due to the "deferred" phasing schedule near Stillwater Road. Depending on how rapid development occurs in accordance to this alternative plan, revenue to the trust on an annual basis after 20 years could range between 7-16 million dollars. Tax payments could range between 10 and 20 million dollars per year. Total direct employment could be more than 4,000 by year 20.

Alternative C

The employment, lease payments, and taxes would be similar to alternative B, again depending upon the rate of development. Under this alternative, there would be less job shifting due to fewer retail/service job opportunities and increased "new" jobs created from a stronger emphasis for tech-related jobs. The rate of development is expected to be less under this alternative since the tech sector in the State is not well established and this is likely to influence the rate of tech development (and jobs) in Kalispell. The expected income stream to the trust and associated payment of taxes would likely be "delayed" or slower compared to Alternative B, which offers a broader range of business opportunities.

Alternative D

The employment opportunities under this alternative could be less than Alternative B. Payments to the School Trust would be affected by loss of revenue from exchange of the SW ¼ to a private entity that would develop residential dwellings. (It is assumed, however, that the State would receive equal value for the land received in exchange.) "Privatization" of the SW ¼ would benefit local tax revenue but some decrease in employment could result with loss of employment opportunities in the SW ¼.

Alternative E

Any of the development scenarios could have application to this Alternative. However, it is likely that rapid development of commercial uses in the NE ¼ could create greater chances for job shifting as suggested by Scenario 4. Under this alternative, there is greater flexibility in land use choice. Tax and lease payments would be similar to Alternative B but the revenue stream could be more accelerated than Alternatives B, C, and D.

4.3.6 Other Utility Infrastructure

Public utility services related to water and sewer have been previously discussed. Other utility needs include electricity, telephone, natural gas, and fiber optics. Design and engineering for these particular services are normally accomplished concurrent with subdivision review of specific project proposals. Each of these services is available to the property but demand for each is unknown pending project review. No additional demand for these services is expected under the No Action Alternative. Development proposals under each of the remaining action alternatives will be subject to standard utility extension contracts with the respective utility provider, which normally requires extension costs and improvements to be borne by the land owner/developer. DNRC will assign all related costs to the lessee.

4.3.7 Aesthetics and Noise

The current aesthetic and noise qualities of Section 36 will be affected under all alternatives with the possible exception of the No Action Alternative, which would seek to maintain the current land use pattern for the property.

4.3.7.1 Alternative A: No Action

The aesthetic qualities of Section 36 would remain relatively unchanged. Most of the property would retain open space in the form of agricultural fields and developed sports fields. Noise would increase only in proportion to increased development activities, including road noise, from adjacent properties. With operation of the highway 93 by-pass through the property, noise will increase substantially, possibly in the range of 72 dB. The noise level of a typical rural environment is 42 dB.

4.3.7.2 Alternative B: Section 36 Neighborhood Plan

Under this alternative, the open space character of Section 36 will gradually evolve into an urban/suburban landscape. The built environment will exhibit other aesthetic qualities. Under the provisions of this alternative, the development philosophies will recognize the character of adjoining properties and seek to minimize conflicts. Proposed building and landscape requirements are intended to exclude objectionable uses and promote a pleasing built environment. Orderly development under the direction of a master plan and within the city limits of Kalispell is preferred over a scattered development pattern often characteristic of lands outside the city limits. Infill opportunities for development on Section 36 may reduce the occurrence of strip commercial development elsewhere along the area roads and highways.

Noise will increase in all land use pods with development. The mixed commercial pod will be influenced by the traffic of Highway 93 and increased vehicular traffic associated with commercial

uses. The noise level of a typical commercial district during the day is 62 dB but may range up to 72 dB if the land use pod is eventually bounded by both Highway 93 and the highway by-pass. Less noise should be associated with the Mixed Professional POD, where distance from Highway 93 increases and land use density decreases. Typical professional office districts generate sound levels of approximately 57-62 dB. The SW ¼ should reflect the characteristic noise levels of a residential district, which is likely to be approximately 47 dB.

4.3.7.3 Alternative C: Section 36 Neighborhood Plan: Modified Commercial

The aesthetic qualities of this alternative would be similar to Alternative B. To some, the aesthetic perception of the Mixed Commercial POD may be more desirable under this alternative since large retail stores would be discouraged. Alternatively, the Mixed Commercial POD would have increase technology-related buildings, which often times retain large structure appearances. Landscaping and other performance standards remain the same as Alternative B. The inability to locate large retail stores under this alternative could result in large stores locating in less desirable locations in the community, creating additional strip commercial appearances along other highway corridors.

Noise distinctions between Alternative B and C are not well defined. It could be argued that less retail commercial traffic would translate to less noise but the close proximity of Highway 93 and the by-pass would probably negate any perceived benefit.

4.3.7.4 Alternative D: Section 36 Neighborhood Plan: Modified Professional and Residential

The aesthetic qualities of this alternative would have some perceived differences in the Mixed Professional and Mixed Residential land use pods, as compared to Alternative B. In the former pod, large campus settings associated with schools and resource management agencies may be a desirable objective from an aesthetic perspective. Similarly, some might prefer the single-family residential character in the SW ¼ as opposed to high density residential uses.

Noise levels associated with each of the land use pods are not likely to be much different from the conditions of Alternative B, although some phasing differences may introduce higher noise levels sooner to the western portion of Section 36.

4.3.7.5 Alternative E: Section 36 Neighborhood Plan: Traditional Zoning

From an aesthetic perspective, this alternative is the least desirable. Many of the uses excluded by Alternatives B, C, and D would be permitted, allowing strip commercial uses within the Mixed Commercial POD. Based upon previous comments from the public, this is not a desirable objective from an aesthetic point of view.

A greater range of commercial and industrial activities would be permitted under this alternative within the Mixed Commercial POD. This could increase noise levels to a range of 67–72 dB.

4.3.8 Access to and Quality of Recreation

Under all alternatives, almost 25% of the land area is dedicated in the long term for developed recreation under a lease arrangement with the City of Kalispell. Under Alternative A, no additional access opportunities, beyond existing situations, is anticipated. Under Alternatives B, C, D, and E, all internal road systems will be built and dedicated to the city of Kalispell for general public access. In addition, bike paths linkages will be made along the interior collector roads, including a proposal to build a below-ground pedestrian and bicycle path to gain access across the proposed highway by-pass. Parks and other green areas will be developed as appropriate to maintain aesthetic qualities and to comply with general subdivision requirements.

4.3.9 Aquifer

4.3.9.1 Analysis of Groundwater Availability

In addition to a no action alternative, three other scenarios for the future development have been proposed that include: B; C; and D. Population and employment growth for each scenario are phased in over three different periods: (1) 0 to 5 years; (2) 5 to 10 years; and (3) 10 to 20 years. Future water demands for each growth scenario were conducted as part of the water system analysis (see Water and Sewer Section). Specific water system demands were quantified for each of the three phase for both C and D development scenarios and summarized in Table 4.75.

Table 4.75 Water Systems Demands

Water System Demands			
	0 to 5 years	**5 to 10 years**	**10 to 20 years**
Scenario 2	252 gpm	510 gpm	1,008 gpm
Scenario 3	271 gpm	534 gpm	1,170 gpm
Scenario 4	512 gpm	1,225 gpm	1,815 gpm

The use of groundwater to meet maximum supply demands was evaluated for the various pumping scenarios presented in Table 4.75 assuming this is continuous pumping and for a one-time maximum fire flow requirement of 4,000 gallons per minute (gpm) for a 4-hour period. It was also assumed the production well that was recently constructed for the Kalispell Youth Soccer Complex would serve as the supply. This is a valid assumption in that the well was pump tested at 1,500 gpm with minimal drawdown (10 feet) observed.

Aquifer parameters for transmissivity (T = 23,860 ft^2/day) and storativity (S = 4.172E-4) are based on the results of a recent pumping test conducted on the NuPac production well (Grimestad, July 1999). These parameters are intrinsic properties of the aquifer and independent of the pumping rate. As such, they can be used to predict drawdown affects for various pumping scenarios. The analytical model Winflow™ (2000) was utilized to run the simulations.

Nine different aquifer response simulations were modeled to evaluate the affects of the nine pumping rates for development Scenarios 2, 3, and 4. The simulations were evaluated to determine what impact they would have on the surrounding potentiometric surface and adjacent wells. The simulations utilize the Theis analytical method that was employed to estimate aquifer parameters from the pumping test data.

The analytical results of the predictive simulations for each pumping rate are tabulated in Table 4.76. In the case of the preferred alternative at full build out (Scenario 2 at a pumping rate of 1, 008 gpm), the cone of drawdown extending from the pumping well, the predicted drawdowns at ½-mile, 1-mile, and 1½-mile are 5.72, 4.81, and 4.29 feet, respectively. In reality, these predictions are very conservative and actual drawdowns would be much less for two reasons: (1) the pump would not run continuously allowing the water levels time to recover; and (2) the transmissivity value used in the calculations is approximately 25 percent of the value calculated for the Kids Sports complex well.

Table 4.76 Predicted Drawdown (feet)

Predicted Drawdown (feet)				
Scenario	Pumping Rate (gpm)	0.5 Mile (2,640 feet)	1.0 Mile (5,280 feet)	1.5 Mile (7,920 feet)
Scenario 2	252	1.43	1.20	1.07
Preferred	510	2.89	2.44	2.17
Alternative	1,008	5.72	4.81	4.29
Scenario 3	271	1.54	1.29	1.15
	534	3.03	2.55	2.27
	1,170	6.63	5.59	4.98
Scenario 4	512	2.90	2.45	2.18
	1,225	6.95	5.85	5.21
	1,815	10.29	8.67	7.71

The drawdown analysis was also completed for fire flow requirements (i.e., 4,000 gpm for a duration of 4 hours) and showed there would be 3.20, 0.95, and 0.30 feet of drawdown at 0.5, 1.0, and 1.5 miles from the wellhead, respectively. However, not all fire flow requirements could be derived from a single well because of pump size limitations. Therefore, at least two wells or additional storage would be needed.

Based on the well driller's report, the aquifer thickness of Kids Sports athletic complex well is at least 250 feet. Therefore, although the additional pumping will lower the potentiometric surface, the predicted maximum amount of drawdown would be minimal with respect to the amount of water in storage. The DNRC Water Rights Bureau has previously determined that a lowering of the water level in a prior appropriators well does not constitute an adverse affect if the well can be deepened to supply the permitted allocation. Based on the aquifer characteristics determined from the pumping tests and the results of the analytical modeling, our analysis also indicates there is sufficient groundwater in the deep artesian aquifer underlying Section 36 to supply the proposed development requirements on a sustainable basis without causing an adverse affect to prior appropriators. This analysis demonstrates there is sufficient water within the aquifer for future appropriation.

4.3.9.2 Susceptibility of Groundwater to Contamination

The U.S. Environmental Protection Agency (EPA) (1999) uses four criteria to determine the susceptibility of a water supply for contamination potential. The four criteria include:

1. Well/intake integrity
2. Sensitivity of natural setting to contaminant transport
3. Actual contaminant presence in source water
4. Nature and management of potential contaminant source

These four factors were used as a basis to evaluate the potential susceptibility of the deep artesian aquifer to contamination.

The initial criterion is based on well construction details. If the perforated interval or well screen is greater than 100 feet bgs than the susceptibility ranking is rated as low. In this case, all of the wells drilled and constructed in Section 36 have the intake at a depth greater than 100 feet; the shallowest well is 162 feet deep. A summary of well construction specifics for all of the wells in the study area is presented in Table 4.77.

Table 4.77 Well Construction Data

Well Construction Data									
GWIC ID	Site Name	Tract	Total Depth	Water Level		Yield	Compl. Date	Well Use	Perforation Depth(s)	Diam.
				Pumping	Static					
84736	Grosswiler Carl	BC	162		130	20	8/10/33	dom, stkwtr		
84733	Dept State Lands	BCB	400	155.7	120.5	3000	3/4/72	irrig	274-308, 314-325, 334-397	16
84734	Dept State Lands	BCBD	452	121	120	105	7/31/71	test well	330-370	6
84737	Dept State Lands	DAAD	205		73	250	7/12/58	com, dom		
169198	DNRC	DB	460		105	1000	6/18/98	irrig	320-336, 345-360, 377-442, 458-460	10

The second criterion is based on the type of aquifer. The shallow alluvial aquifer is considered highly susceptible, semi-confined aquifers are moderately susceptible, and confined aquifers have a low susceptibility rating. As described in Section 3.0 above, the aquifer test data from the pump test conducted on the NuPac production well unequivocally show the water-bearing strata respond as a confined aquifer. In addition, recent aquifer mapping indicates the confining layer in Section 36 is generally greater than 200 feet thick (see Figure 23). These sediments represent an aquitard and serve as a barrier to the downward migration of contaminants. As such, a low rating was assigned for this category.

The third criterion is the previous detection of contaminants in the source water. The only known contaminant to have been detected within the study area is coliform bacteria. Water samples from DNRC's Northwest Land Office have tested positive for coliform bacteria. However, the source of this contamination is not known and may potentially be attributed to either sample collection error or well construction limitations. It is highly unlikely the source of the contamination is the result of indigenous conditions and this detection is considered anomalous at the present time. However, given the presence of this contaminant the ranking for this criterion was rated moderate.

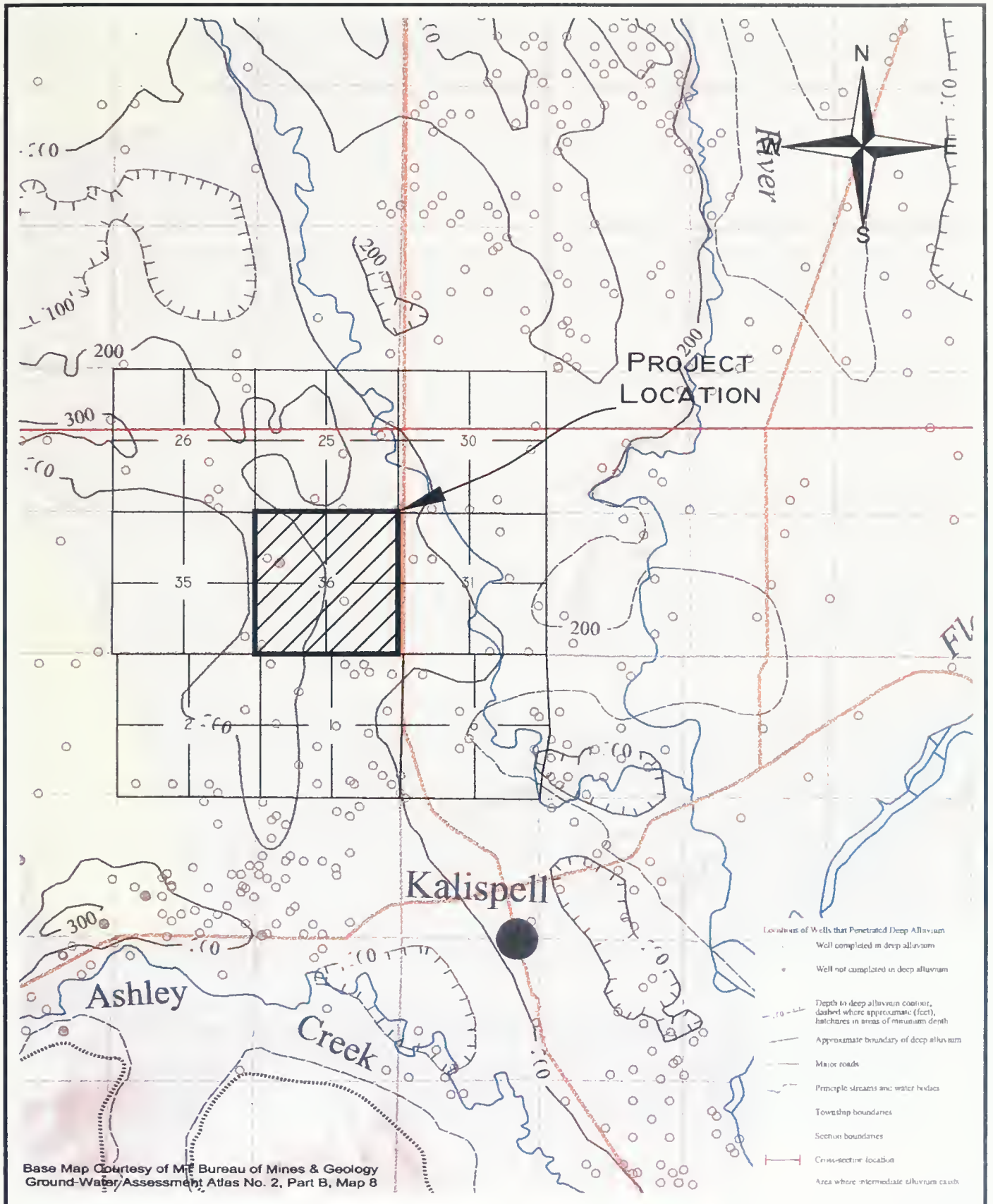


Figure 23. Depth to Deep Alluvium of the Deep Aquifer

Environmental Impact Study
Section 36, T29N, R22W

220226 map8.dwg

5000' 2500' 0 2500' 5000'

Scale: 1" = 5000'

Project Manager: R. Noble Draftsman: J.R.

6-08-01

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(406) 257-7200
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Kalispell, MT 59904

The final criterion is management of potential contaminant sources. The master plan for this area includes connecting to City of Kalispell sanitary sewer and stormwater services. These connections will eliminate the presence of onsite septic systems and onsite stormwater runoff disposal. By eliminating these contaminant sources, the potential for groundwater contamination is highly diminished and is rated low with respect to this factor.

Therefore, the overall susceptibility rating for potential groundwater contamination to occur as a result of the proposed development is rated as low.

4.3.9.3 Aquifer – Summary and Conclusions

The deep artesian aquifer is the predominant source of water in the Kalispell valley. Groundwater obtained from the aquifer supplies municipal, domestic, and agricultural needs. Hydrogeologic information indicates the deep artesian aquifer is present valley-wide, underlying an area of approximately 300 square miles. The aquifer consists of an accumulation of interbedded sand and gravel layers that are at least 350 feet thick.

The deep aquifer within Section 36 varies from approximately 150 to 200 feet bgs. The aquifer is overlain by a confining layer composed of thick beds of compacted glacial till (i.e., silty and clayey gravel) and lakebed deposits (i.e., laminated beds of silt and clay). This confining layer serves as a barrier to the downward vertical movement of surficial contaminants.

Groundwater flow is from the valley margins toward the center and then southeasterly toward Flathead Lake. Recharge to the groundwater flow system primarily occurs from valley-margin inflow from the bedrock aquifer of the surrounding mountain ranges.

Specific water system demands were quantified for each of the three phases for each of the development scenarios. The use of groundwater to meet maximum supply demands was evaluated for the various pumping scenarios and for a one-time maximum fire flow requirement of 4,000 gallons per minute (gpm) for a 4-hour period assuming the Kalispell Youth Soccer Complex would serve as the supply well.

Nine different aquifer response simulations were modeled to evaluate the affects of the nine pumping rates for development scenarios 1, 2, and 3. The simulations were evaluated to determine what impact they would have on the surrounding potentiometric surface and adjacent wells. In the case of the preferred alternative (the maximum pumping rate of 1,008 gpm), the cone of drawdown extending from the pumping well, the predicted drawdowns at ½-mile, 1-mile, and 1½-mile are 5.72, 4.81, and 4.29 feet, respectively. The drawdown analysis was also completed for fire flow requirements (i.e., 4,000 gpm for a duration of 4 hours) and showed there would be 3.20, 0.95, and 0.30 feet of drawdown at 0.5, 1.0, and 1.5 miles from the wellhead, respectively. However, not all fire flow requirements could be derived from a single well because of pump size limitations. Therefore, at least two wells or additional storage would be needed. In reality, these predictions are very conservative and actual drawdowns would be much less for two reasons: (1) the pump would not run continuously allowing the water levels time to recover; and (2) the transmissivity value used in the calculations is approximately 25 percent of the value calculated for the Kids Sports complex well.

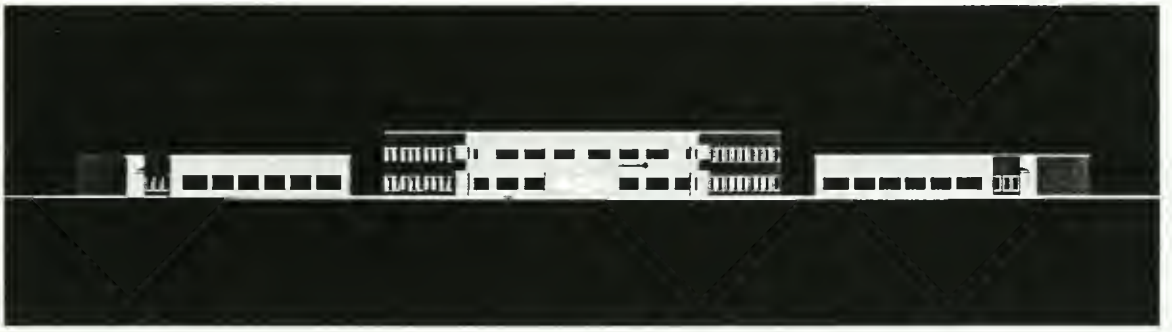
The aquifer thickness of Kalispell Youth Soccer Complex well is at least 250 feet. Therefore, although the additional pumping will lower the potentiometric surface, the predicted maximum amount of drawdown would be minimal with respect to the amount of water in storage. The DNRC Water Rights Bureau has previously determined that a lowering of the water level in a prior appropriators well does not constitute an adverse affect if the well can be deepened to supply the permitted allocation.

Based on the aquifer characteristics determined from the pumping tests and the results of the analytical modeling, our analysis also indicates there is sufficient groundwater in the deep artesian aquifer underlying Section 36 to supply the proposed development requirements on a sustainable basis without causing an adverse affect to prior appropriators. **This analysis demonstrates there is sufficient water within the aquifer for future appropriation under all plan alternatives.**

The susceptibility of the deep artesian aquifer to contamination from the proposed development was evaluated as part of this analysis. The four factors that were used in the analysis included: (1) well/intake integrity; (2) sensitivity of natural setting to contaminant transport; (3) actual contaminant presence in source water; and (4) nature and management of potential contaminant source. The overall susceptibility rating for potential groundwater contamination to occur as a result of the anticipated development is rated as low.

Draft Environmental Impact Statement

Business and Technology Park – Part II



June 13, 2001

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PART II

Chapter 1 Alternatives Including the Proposed Action

PURPOSE AND NEED

The purpose of this Part of the DEIS is to describe and evaluate alternatives to a proposal by Hampstead Partners to lease 60 acres of land in the NE ¼ of Section 36 to construct a business and technology park. The general location of the proposed use is shown in Figure II-1.

1.1 Proposed Action

In response to a Special Lease Proposal (SLP) issued by DNRC on June 7, 2000, DNRC selected a proposal submitted by Hampstead Partners of La Jolla California to build a 60 acre business and technology park (hereinafter referred to as "tech park") in the NE ¼ of Section 36. This specific proposal is subject to a MEPA analysis. Figure II-2 is a graphical representation of the proposed layout of the tech park.

1.2 Need for the Action

The proposal to lease property on school trust lands in Section 36 for the purpose of constructing a tech park is a proposed action by the DNRC and subject to MEPA. The process to initiate and complete this required analysis has been affected by a court-ordered injunction that requires an initial MEPA analysis of Plan alternatives as described previously in Part I of this document.

1.3 Objectives of the Action

1.3.1 List of specific objectives

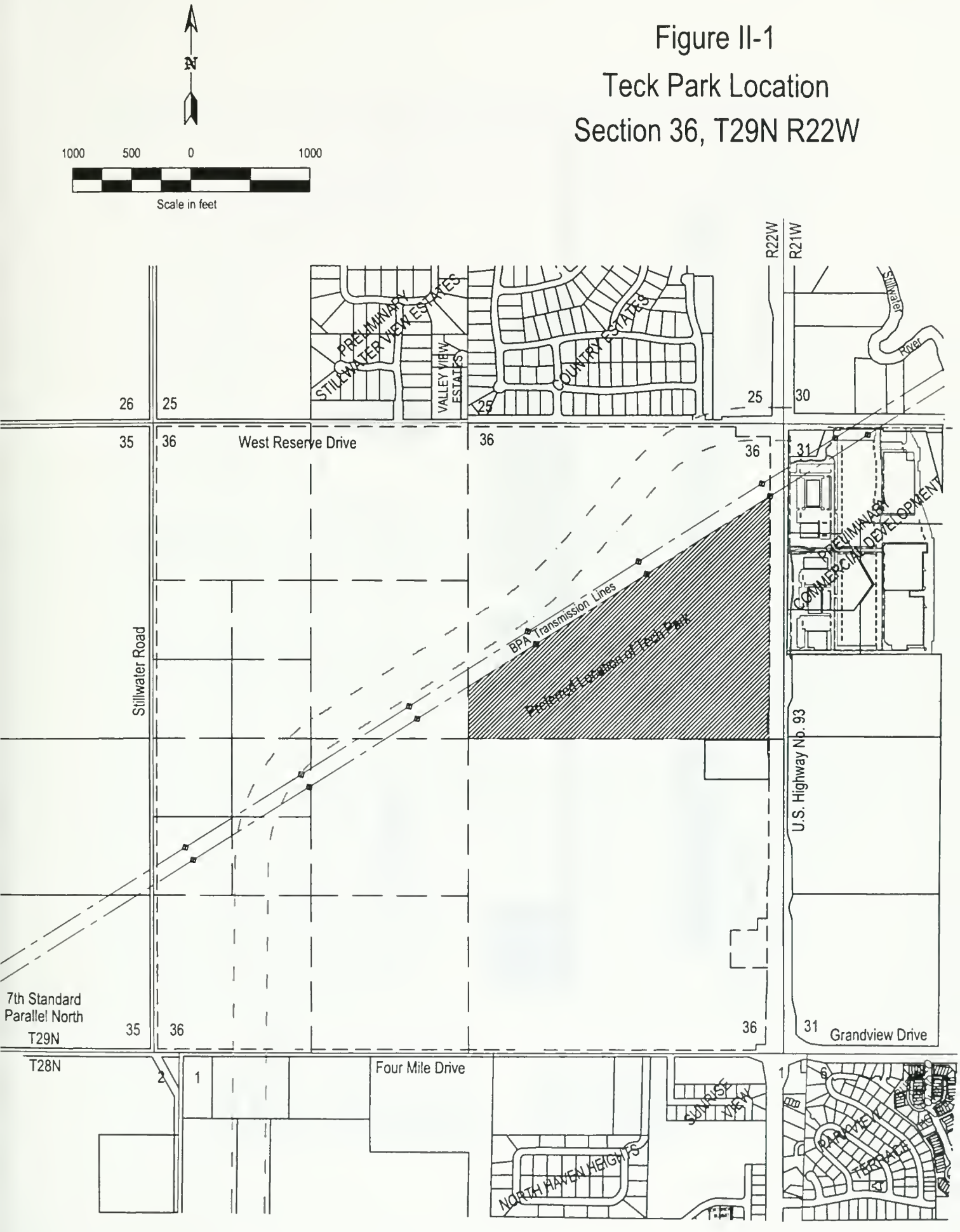
Several of the objectives listed in Part I of this document have application to the review of the tech park proposal including:

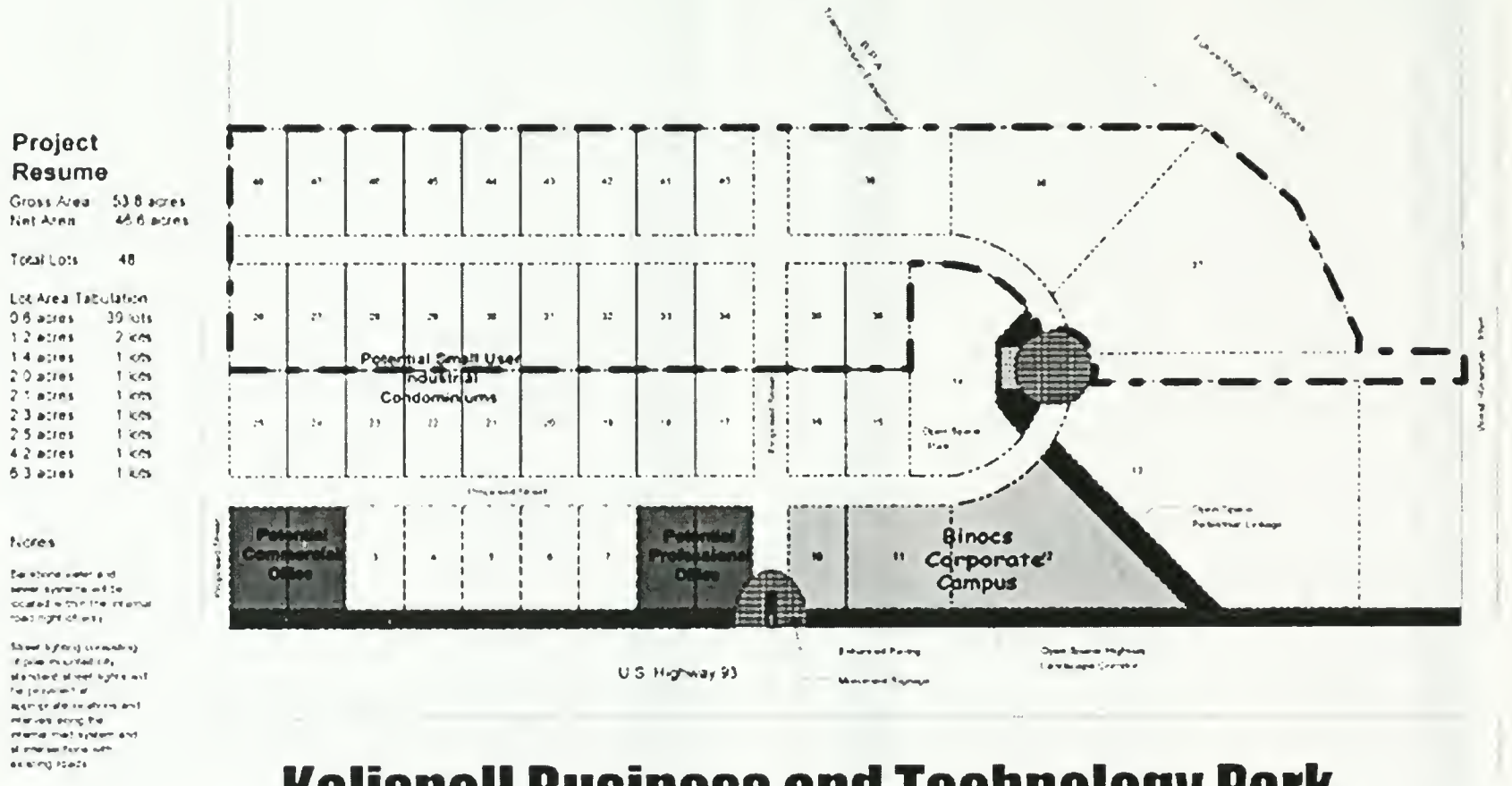
- Develop Section 36 so that the lands are placed to their highest and best use and thereby derive greater revenue for the support of the common school trusts consistent with Section 77-1-601, MCA;

- To satisfy MEPA requirements for a specific land use proposal involving a proposed lease that would permit development of a business and technology park; and

- To link proposed actions on Section 36 to a local government decision-making process.

Figure II-1
Teck Park Location
Section 36, T29N R22W





Kalispell Business and Technology Park

Figure II-2

Hampstead Partners

Contact Chris Foster
(858) 551-5302

1.4 Scope of this Environmental Analysis

The scope of environmental analysis would be limited to alternatives and environmental effects of a proposal from Hampstead Partners to develop a business and technology park on 60 acres within the NE ¼ of Section 36. Part I analyses help to place the tech park proposal in context to the expanded development possibilities of the entire section.

1.4.1 History of the Planning and Scoping Process

This subject has been previously discussed in Part I of this document. Provisions of the Special Lease Proposal released in June 1999 restricted the range of allowable uses to those consistent with the adopted Section 36 Neighborhood Plan. Although this would have permitted a wide range of use possibilities, only one proposal was received by DNRC – the tech park. The formal review process of the tech park proposal under MEPA was begun concurrent with the release of the Initial Proposal and Scoping Document on February 15, 2001. The multidisciplinary team of technical experts identified in Part I shared in the specific evaluation of the tech park proposal. Sections 1.4.2 – 1.4.4 of Part I have application to this analysis.

1.5 Decisions That Must Be Made

DNRC would use the MEPA process to select a preferred alternative to the proposal by Hampstead Partners to build a tech park. The Area Manager of the Northwestern Land Office will be the decision-maker for the tech park proposal.

1.6 Applicable Legal and Regulatory Requirements and Coordination

The description of legal, regulatory and coordination requirements identified in Part I have application to this Part of the document. The recent signing of SB 376 by the Governor will limit redundancy of MEPA analysis for subsequent city actions involving annexation, zoning, and subdivision review involving lands within Section 36. Annexation, zoning, and subdivision review will be subject to City of Kalispell review and approval.

Chapter 2 Alternatives Including the Proposed Action

2.1 Introduction

Chapter 2 describes the alternatives developed in response to issues identified by interested individuals and agencies. The written correspondence would seem to support the consideration of alternatives that are either supportive of the tech park proposal or wish to maintain the status quo. Accordingly, two alternatives are considered. Alternative A is the No Action alternative, where the agricultural status quo of the property in the NE ¼ would persist. Alternative B is the Hampstead proposal received in response to the issued SLP.

2.2 History and Process Used to Formulate the Alternatives

The overall planning process narrowed the range of alternative considerations for Section 36 as previously described in Part I. A competitive proposal process further narrowed options where the only response to an advertised SLP was the tech park proposal by Hampstead Partners (Alternative B). Alternative A was formulated from issues identified in response to the scoping process initiated in February 2001.

2.3 Alternative Design, Evaluation, and Selection Criteria

2.3.1 Technical Design Requirements

The area subject to the 60 acre lease is located within the NE ¼ of Section 36. The Alternative Plans presented in Part I, except for alternative plan A, would permit a tech park. Access to the tech park under the various plan alternatives (Part I) would be from Highway 93. Internal roads to serve the property would be designed and built by the lessee in accordance to City of Kalispell design standards. Water supply would be provided by the City of Kalispell. Sewage collection and treatment would be from the City of Kalispell waste water treatment system. Both of these services would be provided by extension of the water lines and sewer mains to the property at the responsibility of the lessee. The public infrastructure improvements consisting of roads, water, and sewer would be granted to the City of Kalispell upon completion. At build-out, approximately 600,000 sq ft of buildings will be associated with the 60 acres. The tech park would be built in phases, with at least one anchor tenant constructed in the initial phase. A technology park could accommodate a wide range of business uses. These might include, but not limited to, software development, telecommunications companies (both involved with development or service delivery) high tech manufacturing and assembly operations, professional services such as accounting, legal, copying, technical support, engineering, and ancillary services such as food vendors. A tech park could include a "wired hotel" for business travelers. There would be a need for warehousing and shipping facilities for products used or delivered from the park and studio space for photography and video production. Tecnology companies could conceivably need clean or wet lab space. Allowable uses within the tech park would include professional offices but retail commercial uses intended to serve the general public would be precluded.

The technical evaluation of a 600,000 sq ft tech park would consider the direct, indirect, and cumulative effects associated with the development of a tech park in the NE ¼ of Section 36. The effects analysis is guided by establishing cause/effect relationships related in particular to (1) transportation, (2) City utility services, and (3) economics. These three components of the man-made environment were identified as key issues during the scoping process.

Under Alternative A, no additional development is proposed so detailed evaluation of utility service extensions is not necessary. Alternative B is explored in detail relative to transportation, utility extensions, and economics based upon a phased building schedule.

2.3.2 Outcome Requirements

The purpose of the evaluation is to determine whether the proposed alternatives satisfy the project objectives set forth in Part I, Section1.3.1. The outcome of the analyses will help identify effects and related mitigation measures associated with each alternative and serve as the basis for selecting a preferred alternative.

2.3.3 Environmental Protection Requirements

The project proposal would be evaluated against local, state, and national laws related to water quality, air quality, threatened and endangered species, and cultural/historical features.

2.4 Alternatives Considered but Eliminated From Detailed Study

There are no proposed uses for Section 36 other than the tech park proposal by Hampstead Partners. Alternative uses for Section 36, including within the Mixed Commercial POD, have been evaluated in Part I. The proposed tech park would not be in conflict with any of the proposed action alternatives in Part I. Considerations to locate the tech park elsewhere in Section 36 were dismissed – the highway frontage between U.S. Highway 93 and the proposed Highway 93 by-pass is considered to be appropriate to a quasi-industrial use and premature to other land areas in Section 36 where infrastructure and highway access is less convenient. All future considerations for the use of the property would be subject to a SLP proposal consistent with the alternative plan selected through the current MEPA process and as described in Part I of this document.

2.5 Description of Proposed Alternatives

Alternative A would seek to maintain the agricultural status quo of the property. Alternatives B would permit development of a proposed business and technology park in the NE ¼ of Section 36. Common to Alternatives B is (1) annexation to the City of Kalispell, (2) zoning by the City of Kalispell (see Part I discussion for Alternative B), (3) extension of City utility services to the tech park by Lessee of the property, (4) subdivision review of the tech park by the City of Kalispell, and (5) payment of land and improvement taxes by the lessee.

2.5.1 Alternative A – No Action

This alternative would seek to maintain an agricultural theme for the NE ¼ of Section 36 by prohibiting the selection of any non-agricultural use for the property. Decisions consistent with this alternative would include the following:

- Seek continued leasing of the NE ¼ for ag-related uses;

- Maintain the property outside the city limits of Kalispell;
- Maintain the existing AG-80 zoning classification;
- Minimize extension of utility services and easements through the property;
- Discourage future construction of the west side by-pass to U.S. Highway 93; and
- Continue to seek resolution to the BPA issues related to easement rights and compensation to the trust.

2.5.2 Alternative B – Hampstead Proposal

Narrative sections of the Hampstead Proposal are included in Appendix F of Part I. Graphical displays (building elevations) of a typical building design are shown in Figures II-3 & II-4. In general, the proposal is to build in an area of approximately 60 acres in the NE ¼ of Section 36 as extending along U.S. Highway 93 between the DNRC offices on the south and West Reserve Drive on the north. The proposal references a net area of 53.8 acres due to the area associated with the proposed highway by-pass and BPA power corridor, where use by Hampstead would be severely restricted. A two- phase plan of development is proposed in anticipation that a majority of the tech park would be subleased within a 3-5 year period. This proposal would not exclude and, in fact, would encourage an extended phasing schedule of 10 or more years. A more flexible development schedule would recognize market demands and provide a gradual phase-in of lease payments to coordinate with start-up (development) of subsequent phases and this would reduce financial risk to both DNRC and to the lessee by minimizing the chance of overbuilding in an uncertain market. Alternative B would also allow for redesign of the original tech park layout to recognize the severe limitations of the BPA power corridor, which were not fully known at time of the SLP. Figure II-5 is a lease lot configuration that recognizes the specific limitations of the BPA and by-pass corridors, the intersection alignment needs with the commercial development on the east side of the Highway, and a logical extension of a collector road system beyond the tech park boundaries. Subdivision review by the City of Kalispell will determine the final subdivision design and location of the tech park within the NE ¼ of Section 36. The proposal indicates responsibility by Hampstead for all infrastructure improvements, including extension of all utility services to the site and construction of the internal roads. The proposal also recognizes obligations for landscaping along the highway corridor and around all developed properties as set forth by the Section 36 Neighborhood Plan.

2.6 Description of Relevant Past, Present, and Reasonably Foreseeable Future Actions Not Part of the Proposed Action

2.6.1 Past Actions

The relevant past actions on Section 36 have been previously discussed in Part I, Section 2.6.1. Relevant to the NE ¼ of Section 36 are the issues specific to the BPA power line corridor and proposed alignment of the U.S. Highway 93 by-pass.

2.6.2 Present Actions

Past actions have been discussed previously in Part I, Section 2.6.2. Present actions by DNRC include the ongoing management of leases with a farmer for agricultural use of lands within the NE 1/4 of Section 36.

2.6.3 Reasonably Foreseeable Future Actions

All known future actions are being evaluated with this DEIS as discussed in Part I of this document. The only foreseeable future actions in the NE ¼ of Section 36, excepting agricultural use, include considerations for a proposed business and technology park and compensation for a perfected easement associated with the BPA corridor. A future action that will require additional consideration would be the purchase by MDT of an easement for the proposed Highway 93 by-pass alignment.

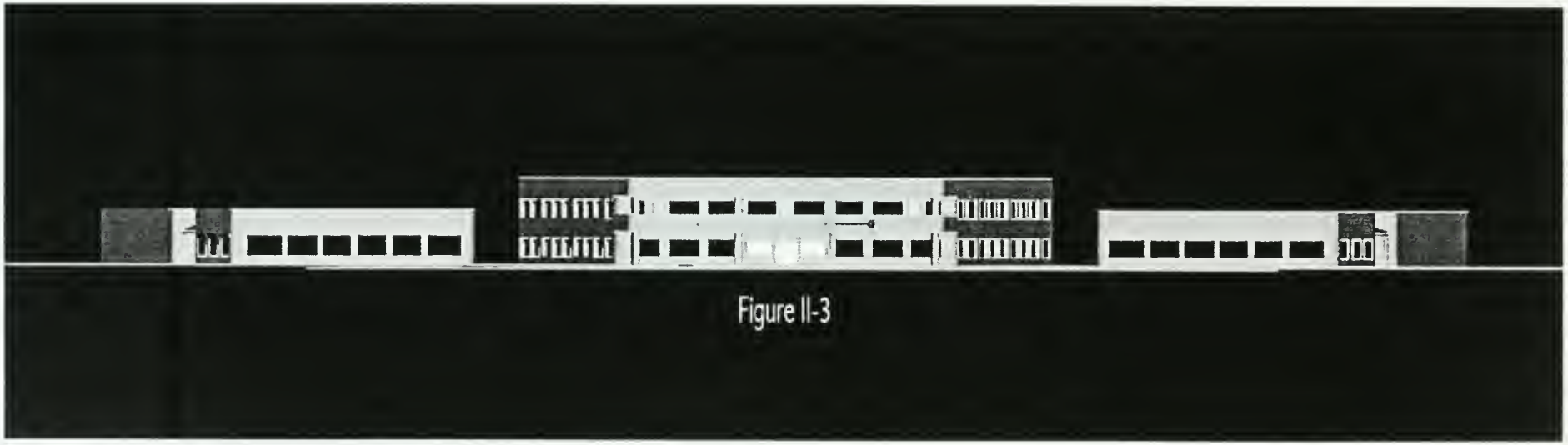


Figure II-3

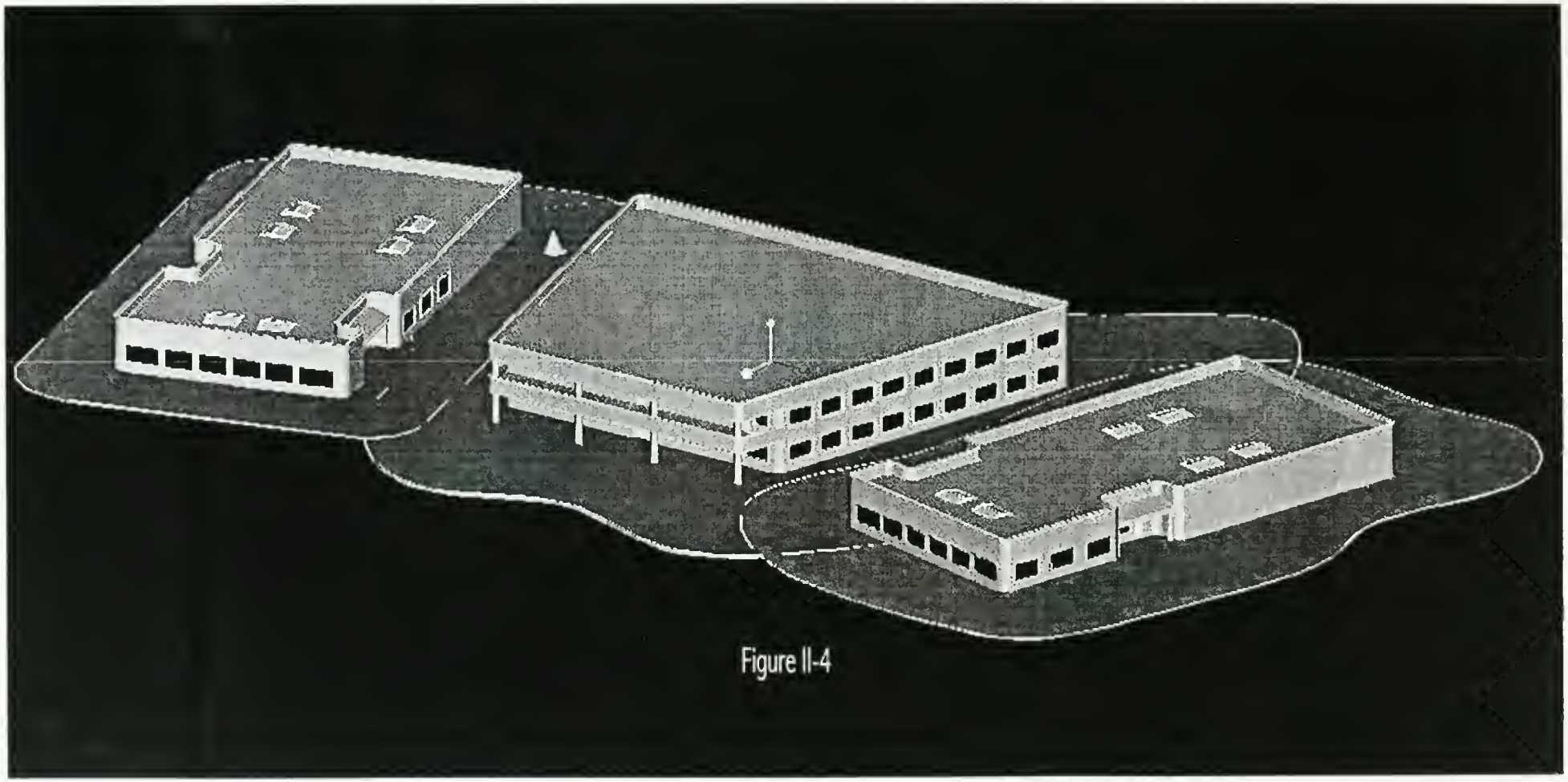
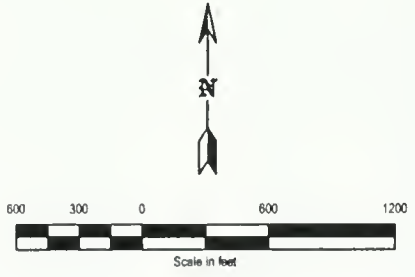
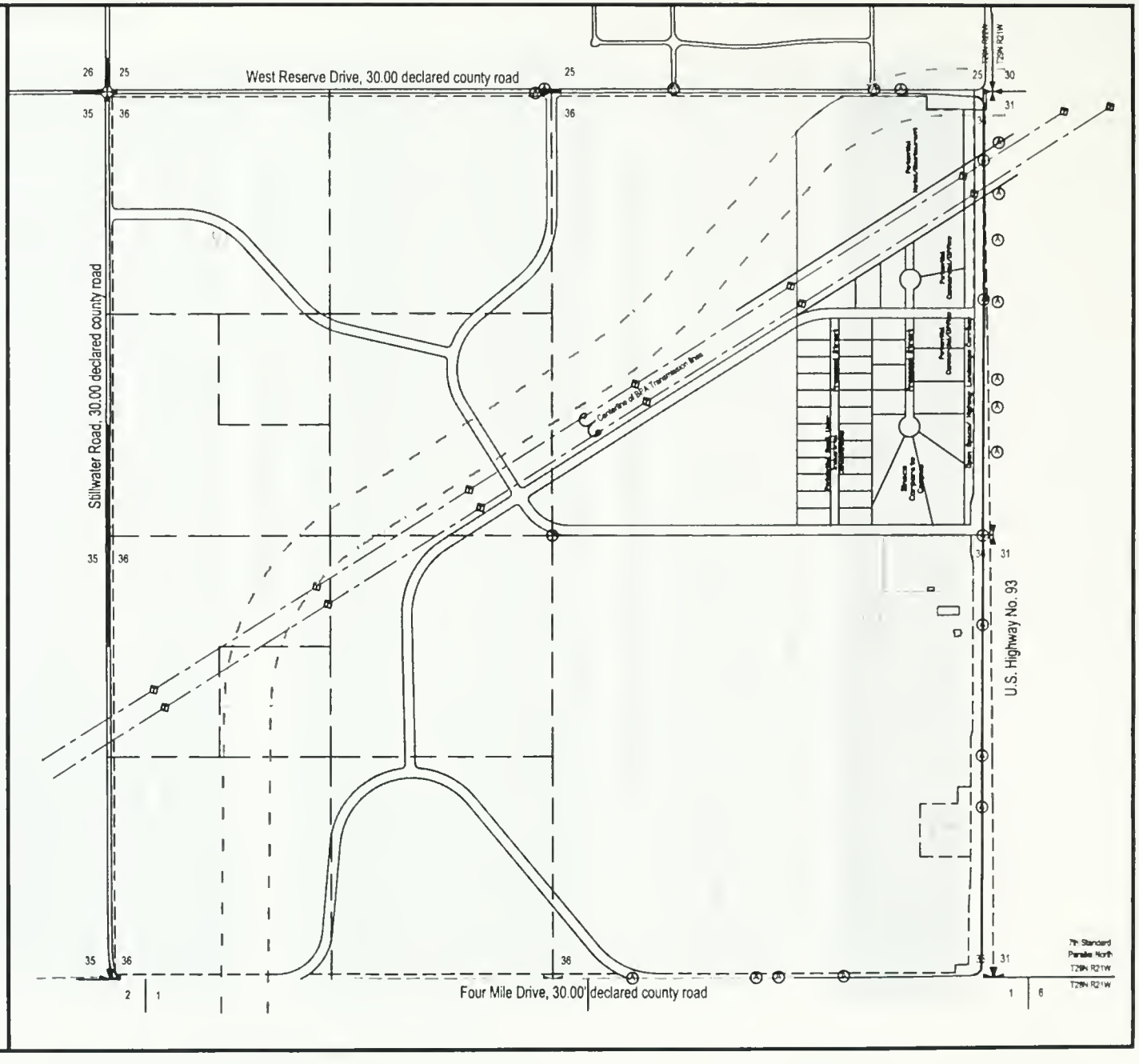


Figure II-4

Figure II-5
Alternative Lot Design





2.7 Summary Comparison the Predicted Achievement of the Project Objectives and the Predicted Environmental Affects of all Alternatives

2.7.1 Summary Comparison of Predicted Achievement of Project Objectives

The project objectives will be satisfied by alternative action B. Alternative A will not achieve objectives related to (1) highest and best use, (2) analysis of specific proposals including a proposed business and technology park, and (3) linkage relationships to local government decision-making processes

2.7.2 Summary Comparison of Predicted Environmental Effects

The no-action alternative would have the least affect on the physical environment but achieves the least in terms of overall benefit to the school trust and local economy. Alternative B would have positive effects to the local economy and to the school trust but have more direct and cumulative effects relative to traffic generation and local water and sewer services. The tech park proposal anticipates an initial annual payment to the school trust of approximately $4,356.00 per year per acre as compared to an agricultural lease rate of approximately $40 per year per acre. The employment associated with the tech park would be considered "new" jobs to the local economy. Water and sewer services to serve the tech park would be adjacent to the property concurrent with development activities occurring on the east side of Highway 93, opposite the NE ¼ of Section 36. The effects analyses identify causal relationships to help define appropriate mitigation strategies to address impacts related, in particular, to roads, water, and sewer. Mitigation needs and/or service requirements are specific to Alternative B.

2.7.3 Identification of the Preferred Alternative

Alternative B is the preferred alternative. This alternative achieves the project objectives, including realization of new job creation, benefit to the local economic mix of the Kalispell area, and substantially increased revenue to the school trust. The tech park would have favorable location at a major highway intersection and be in close proximity to Flathead Valley Community College, which is pursuing complementary training, support, and development in the technology sector. This alternative recognizes the intrinsic values of the property for attracting higher income land use opportunities for the school trust, as compared to income potential from agricultural-related uses. The tech park would be annexed into the City of Kalispell and be served with city services. The lessee would be responsible for extending city utility services to the tech park and the taxes associated with the development are expected to compensate for the provision of other city services, such as police and fire protection.

Chapter 3 Affected Environment

3.1 Introduction

Section 36 is School Trust Land administered by DNRC for the "common schools" of Montana. For the purposes of describing the affected environment, please refer to the discussions presented in Part I of this document. Whenever, appropriate, the scope of discussion is narrowed to those aspects of Section 36 having a direct relationship to the NE ¼ where the tech park is being proposed.

3.2 Description of Relevant Effected Resources – Human Environment

3.2.1 Land Use

The current land use within the NE ¼ is agriculture. The description of land use set forth in Part I, Section 3.2.1 is adequate to describe Section 36 and the NE ¼ of Section 36 and is incorporated herein by reference.

3.2.2 Transportation

There are no internal roads at this time in the NE ¼. The proposed west side by-pass to U.S. Highway 93 north is proposed through the NE ¼ as depicted in Certificate of Survey 13423, Records of Flathead County, Montana. The description of roads and traffic set forth in Part I, Section 3.2.2 is adequate to describe Section 36 and the NE ¼ of Section 36 and is incorporated herein by reference.

3.2.3 Water System

There is no water system currently available to the NE ¼. However, a city water line is expected to be extended to the east line of the NE ¼ in conjunction with the development of the Crosswell Mountain View Plaza. The description of the existing water system set forth in Part I, Section 3.2.3 is adequate to describe Section 36 and the NE ¼ of Section 36 and is incorporated herein by reference.

3.2.4 Sewage Collection System

There is no public sewer system currently available to the NE ¼ of Section 36. The description of the existing sewage collection system set forth in Part I, Section 3.2.4 is adequate to describe Section 36 and the NE ¼ of Section 36 and is incorporated herein by reference.

3.2.5 Population and Economy

Current revenues for agricultural leasing in the NE ¼ averages less than $40.00 per acre. The description of the existing population and economic conditions of the area as set forth in Part I, Section

3.2.5 is adequate to describe Section 36 and the NE ¼ of Section 36 and is incorporated herein by reference.

3.2.6 Other Infrastructure

The description of the existing utility infrastructure associated with electricity, telephone, natural gas, and fiber optics is set forth in Part I, Section 3.2.6 is adequate to describe Section 36 and the NE ¼ of Section 36 and is incorporated herein by reference. All of the aforementioned services are currently available to the NE ¼.

3.2.7 Aesthetics and Noise

The NE ¼ of Section 36 is bounded on the east by U.S. Highway 93 North and on the north by West Reserve Drive. Interior to the NE ¼ is a two-tower electrical transmission corridor and farm land consisting primarily of grain crops. The open space (crop land) aesthetics of the site is negatively affected by the power lines and associated towers. Noise levels are elevated beyond a typical rural situation due to the heavy traffic associated with the adjoining arterials (see noise discussion in document referenced in Part I, Section 1.4.2.7).

3.2.8 Access to and Quality of Recreation

There is no public access to the NE ¼ of Section 36 due to the existing farming practices and imposed restrictions for hunting due to the proximity of residential structures and the BPA power lines.

3.3 Description of Relevant Effected Resources – Physical Environment

3.3.1 Soils

The description of soils presented in Part I, Section 3.3.1 is adequate to describe the general soil characteristics for the NE ¼ of section 36 and is herein incorporated by reference.

3.3.2 Wildlife

The NE ¼ of Section 36 offers no suitable habitat for wildlife with the possible exception of winter and spring feeding of agricultural cereal grains by resident and migratory birds. The property is heavily cultivated, lacks habitat diversity, and is frequently disturbed by a variety of farming activities. The disturbance factor is high due to the close proximity of the arterial road systems.

3.3.3 Vegetation

The NE ¼ is absent of all native and natural vegetation. The site is extensively farmed for cereal crops and is grazed following harvest. However, the site has utility for farm crops.

3.3.4 Aquifer

The description of the aquifer presented in Part I, Section 3.3.4 is adequate to describe the general aquifer characteristics for the NE ¼ of Section 36 and is herein incorporated by reference.

3.3.5 Air Quality

The description of air quality presented in Part I, Section 3.3.5 is adequate to describe the general air quality characteristics for the NE ¼ of section 36 and is herein incorporated by reference. The air quality of the NE ¼ would be particularly influenced from farming practices, car emissions from the busy intersection of West Reserve Drive and U.S. Highway 93 North, and by the asphalt and gravel operations associated with the MDT and NuPac operations to the east of the NE ¼.

3.4 Description of Relevant Non-Affected Resources – Physical Environment

The description of the relevant but non-affected resources described in Part I, Section 3.4 has application to this part and is hereby incorporated by reference.

3.5 Description of Areas Related to Cumulative Effects

Part I of this document is adequate to describe the relevant aspects of the human and physical environment that might be affected by future state actions on Section 36 by describing the effects that might be associated with development of five (5) plan alternatives.

Chapter 4 Alternatives Including the Proposed Action

4.1 Introduction

The environmental consequences of 2 alternatives are evaluated in this chapter of the EIS. Although the evaluations are specific to an anticipated use, some of the effects analysis of Chapter 4 in Part I have application as well. **Part I serves as a detailed cumulative effects analysis of how subsequent development in Section 36 might interrelate with the development of a tech park in the NE ¼ of Section 36.** Based upon the scope of identified public issues, the effects of development are particularly focused on such variables as (1) transportation, (2) city utility services, and (3) economics.

4.2 Predicted Attainment of the Project Objectives of all Alternatives

4.2.1 Predicted Attainment of Project Objective to "Develop Section 36 so that the lands are placed to their highest and best use and thereby derive greater revenue for the support of the common school trusts consistent with Section 77-1-601, MCA"

4.2.1.1 Alternative A: No Action

The revenue objective as stated above will not be achieved by this Alternative. The No Action alternative assumes that agriculture will remain the primary use of the property. Under current conditions, agricultural leasing is not likely to generate more than $40 per acre. Based upon a commercial lease proposal already received by DNRC for property within Section 36, up to $4, 356 per acre [for unimproved property] can be expected for a commercial lease within the NE ¼ of Section 36.

4.2.1.2 Alternatives B

This alternative would achieve the revenue objectives for the school trust. Each phase of development would need to compensate the Trust in accordance to the terms of the lease, which is expected to require a per acre lease rate of $4,356.00. This is substantially higher than the $40.00 per acre that would be expected with an agricultural lease. A 60 acre lease to the tech park could generate approximately $261,000 per year as compared to $2,400 for the equivalent agricultural acreage.

4.2.2 Predicted Attainment of Project Objective to "satisfy MEPA requirements for a specific land use proposal involving a proposed lease that would permit development of a business and technology park"

The Hampstead Proposal for a business and technology park is being evaluated under the MEPA process so Alternative B satisfies this objective. No specific proposals would be evaluated if Alternative A were selected.

4.2.3 Predicted Attainment of Project Objective to "link proposed actions on Section 36 to a local government decision-making process"

Alternative A would have no relationship to this objective since no actions are proposed. Land use proposals under Alternative B would be subject to City of Kalispell review authority relative to matters of annexation, plan amendments, subdivision, and zoning.

4.3 Predicted Effects on Relevant Affected Resources of all Alternatives

4.3.1 Land Use

The discussions in Section 4.3.1.1 of Part I relative to the (1) BPA Power Lines, (2) Highway 93 by-pass, (3) Reclassification of State School Trust Lands, and (4) Selection of Specific Project Proposals have application to this section of analysis. The reader is encouraged to consult the Special Lease Proposal referenced in Part I, Section 1.4.2.12 for information concerning the specific stipulations required for proposals responding to the Section 36 SLP. The SLP is carefully crafted to protect the interests of the trust by securing the best possible return to the trust, assigning all improvement costs to the lessee, securing the project with bonds or other forms of security, and verifying the financial capability of the proposer, among others. A DNRC property manager will provide quality control relative to lease administration, building and infrastructure improvements, and adherence to local zoning and subdivision regulations.

Under Alternative A, the existing agricultural use of the land would not be affected. Under Alternative B, approximately 60 acres in the NE ¼ would eventually be converted to developed facilities, causing the associated loss of farmable land.

4.3.2 Transportation

No impacts to "transportation" would occur under the No Action alternative unless the highway by-pass is constructed. **The analysis presented below has application to Alternative B.**

The proposed road network would access all of the lots and two other roads that would access onto Highway 93. The southern access would line up with the existing driveway located near the mid section line. The northern access would be opposite the entrance to Crosswell Mountain View Plaza. These would be the only two accesses to the site from Highway 93. No buildings, parking areas or roads would be constructed under the B.P.A. Transmission Easement until the lines are either raised or relocated.

Table 4.1 shows the proposed phasing assumptions for development of the tech park.

TABLE 4.1
Proposed Land-use

Phase	Northeast Quadrant of Section 36
Existing	▪ Agriculture
0-5 years	▪ 120,000 Sq. Ft. Technology park complex
5-10 years	As above, plus ▪ 180,000 Sq. Ft. Technology park complex
10-20 years	As above, plus ▪ 300,000 Sq. Ft. Technology park complex

4.3.2.1 Trip Generation and Assignment

For this analysis, the nationally accepted trip generation rates contained in the sixth edition *Trip Generation* manual by the Institute of Transportation Engineers were used. For the purposes of this analysis a vehicle trip is defined as any trip that either begins or ends at the proposed development site. The analysis involves establishing the number of trips that are generated by the site under the current conditions and with the proposed development. Due to the general location of the proposed development site to the City of Kalispell it was determined that the critical traffic impacts on the intersections and roadways would most likely occur on weekdays during the morning and evening peak hours of traffic use on the adjacent roadways.

The trip generation rates for the various land-uses proposed for this site were obtained from the *Trip Generation* manual. It should be noted that in the analysis it was assumed that approximately 25% of the technology park complex would be storage warehouse space and 75% would be general office space. **Table 4.2** shows the trip generation rates and totals for each phase of the development.

TABLE 4.2
Trip Generation Rates

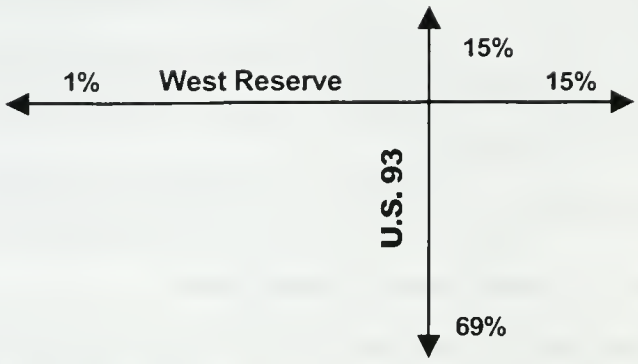
Project Phase	AM Peak Hour Trips	PM Peak Hour Trips	Total Weekday Trips
0-5 Years	172	153	1145
5-10 Years	258	230	1717
10-20 Years	430	384	2862
Total	**860**	**767**	**5,724**

Table 4.2 shows that the proposed development would result in approximately 860 trips during the weekday AM peak hour and 767 trips in the PM peak hour.

4.3.2.2 Trip Distribution

There are four routes that visitors can travel to and from the site, from the south and north on U.S. 93 and from the east and west on West Reserve Drive. Because of the close proximity of the City of Kalispell, it is estimated that the majority of the trips will occur to and from the south on Highway 93. Moderate percentages of trips will occur to and from the east on West Reserve and north on U.S. 93. **Figure II-6** shows the estimated trip distribution of trips generated by the development

FIGURE II-6
Estimated Trip Distribution
(Years 0-5)

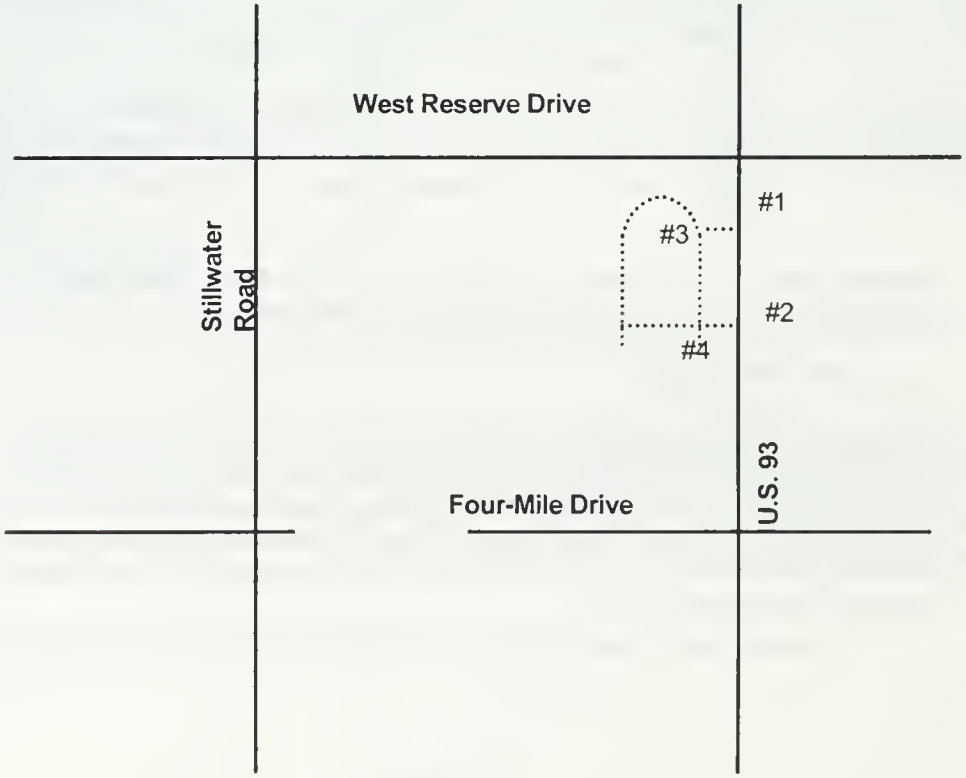


It was assumed that traffic approaching the development would egress the area using the same route used to arrive. A minor percentage of the traffic would travel to the large Crosswell Mountain View Plaza retail development. However, drivers would likely continue away from the site in the same proportions and have the same overall effects on the road network.

4.3.2.3 Internal Road Network

The internal road of the tech park as shown in Figure II-2 and related intersections is summarized in **Figure II-7.** Please note that the road configuration is somewhat different than the layout shown in Figure II-5 but the analysis remains applicable under either configuration.

Figure II-7
Internal Road Network



The anticipated form of traffic control has been estimated based on anticipated traffic demand. A summary of the anticipated form of traffic control for each intersection within the study area is presented in **Table 4.3.**

Table 4.3
Anticipated Form of Intersection Traffic Control

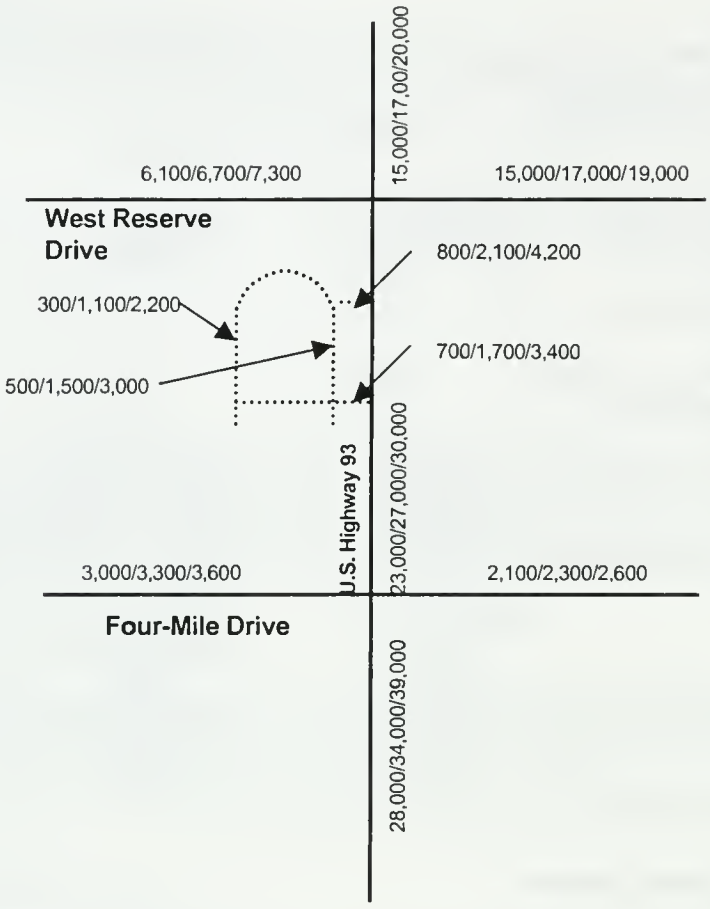
Intersection*	0-5 Years	5-10 Years	10-20 Years
West Reserve/U.S. 93	Signal	Signal	Signal
Grand View/U.S. 93	Signal	Signal	Signal
#1	Signal	Signal	Signal
#2	STOP for Eastbound Traffic	STOP for Eastbound Traffic	STOP for Eastbound Traffic
#3	STOP for Northbound and Southbound Traffic	STOP for Northbound and Southbound Traffic	STOP for Northbound and Southbound Traffic
#4	STOP for Southbound Traffic	STOP for Southbound Traffic	STOP for Southbound Traffic

*See FIGURE II-7 for intersection numbering sequence

4.3.2.4 Traffic Volumes

The traffic volumes are going to increase as a result of the development. The projected traffic volumes on the adjacent road network are shown in **Figure II-8**. The anticipated corridor traffic volume increases would not be great enough to require the enlargement of any of the adjacent roads.

FIGURE II-8--Anticipated Traffic Volumes--2005/2010/2020



4.3.2.5 Intersection Operation

The likely traffic demands for each intersection within and adjacent to the development were determined for the A.M. and P.M. peak weekday conditions using the trip generation rates, and the estimated approach and egress patterns.

Level of Service (LOS) analyses were produced for the years 2005, 2010, and 2020. The calculations indicate the traffic conditions at the end of each of these growth phases. These analyses take into account the committed developments that are currently being proposed within the area, the impacts of the proposed development, and the general growth patterns within the greater Kalispell area.

Using the trip generation rates, the anticipated trip distribution, and likely intersection turning movements it was possible to determine probable peak hour turning movement for the intersections around the development. Using projected turning movements for the three development years a LOS table was created to show the traffic impacts the development would have. The analysis indicates that it will be necessary to modify the form of traffic control in the future to ensure that the some intersections function optimally. These alterations were applied by determining the minimum alterations necessary to keep a desirable LOS. These modifications include signal timing and phasing changes, and the addition of new actuated phases. This analysis produced an optimized LOS for each intersection. The LOS is shown in **Table 4.4** as applicable to the Alternative B design. Improved traffic movement would result

from the collector road design depicted in Figure II-5 by providing a more direct outlet of traffic from locations of future development.

TABLE 4.4
LOS Analysis

	Existing		2005		2010		2020	
Intersection	**AM**	**PM**	**AM**	**PM**	**AM**	**PM**	**AM**	**PM**
West Reserve & 93 (S)	B	B	B	B	C	D	C	C
Grand View & 93 (S)	A	A	A	B	A	D (*B)	A	E (*B)
Int #1 & 93 (S)	NA	NA	A	B	A	B	C	D (*C)
Int #2 & 93 (U)	NA	NA	B	B	B	C	B	E (*B)
Int #3 (U)	NA	NA	A	A	B	B	C	C
Int #4 (U)	NA	NA	A	A	A	A	A	A

(S) – Intersection is signalized or will be signalized prior to 2005
(U) – This intersection will initially be STOP sign controlled
*Possible LOS with signal phasing improvements.

The LOS analysis indicates that the anticipated traffic volumes generated by this proposed development will only produce minor impacts on the adjacent intersections. All of the intersection within and adjacent to the development will function adequately (LOS C or better) through the year 2005.

In the second phase of the development, between 2005 and 2010, there will be a need to add a left turn phase for northbound traffic at the Grand View/93 intersection but all other intersections should function well under current configurations. Based on the findings of this analysis these modifications are hereby included as part of the proposed development. The required intersection modifications include the following:

Intersection modifications required 2005-2010

- Grand View/93 – add a northbound left-turn phase

The third phase of the development will add more traffic to the road network causing two additional intersections to have performance problems. Intersections #1 and #2 will each fall below LOS C. Based on the findings of this analysis these modifications are hereby included as part of the proposed development. In order to continue to provide an acceptable LOS at these intersections the modifications required from 2005-2010 must be in-place and the following additional modifications must be implemented:

Intersection modifications required 2010-2020

- Intersection #1- add left-turn phases for all approaches
- Intersection #2 – add a right turn ramp and a southbound merge lane

The extent of the traffic impacts generated by this proposed development will be limited to the intersections in the immediate vicinity of the development. The increased traffic volumes on the adjacent roads will not create any noticeable traffic problems.

4.3.2.6 Highway 93 By-Pass

If the bypass were to be constructed during the next 20 years, it would likely shift between 25% and 30% of the traffic away from Highway 93 south of West Reserve. This shift would have a beneficial impact on the Highway 93 intersections south of West Reserve. The construction of the bypass would have a significant impact on the West Reserve/Highway 93 intersection. West Reserve would no longer intersect 93 from the west. It is also likely that the portion of West Reserve east of 93 would likely have to be widened to at lease four travel lanes.

The construction of the bypass through Section 36 will not impact the internal operation of the development. The net result of having the bypass in place would be a positive impact making it easier to access and egress the site from Highway 93.

4.3.3 Water System

The water demand and sewer flows for the proposed Technology Park were analyzed independently of other development possibilities presented in Part I of this document. This Section discusses the effects of the Technology Park to the existing Kalispell water system. No water system requirements for domestic purposes are necessary under Alternative A.

4.3.3.1 Water System Analysis

The water supply and distribution system was analyzed with respect to providing service to the proposed Technology Park alone. Impact on existing infrastructure, as well as, requirements for future supply and storage were examined. The employment and water demand data for the Technology Park are summarized in Table 4.5.

Table 4.5 Technology Park Water Demand Projections

	Phase		
	0-5 Years	5-10 years	10-20 years
Commercial Population[1]	320	825	1,614
Commercial Demand Factor (gpd per capita)	60	60	60
Calculated Commercial Demand (gpd)	19,200	49,500	96,840
Total Average Day Demand (gpd)	19,200	49,500	96,840
Maximum Day Demand (gpd)	51,840	133,650	261,468
Peak Hour Demand (gpd)	76,800	198,000	387,360

The factors for a fire demand during the maximum daily demand period are summarized in Table 4.6.

Table 4.6. Technology Park Water Demand Conditions

Phase	Maximum Day Demand (gpm)	Fire Demand (gpm)
0-5 years	36	2000[1]
5-10 years	93	2000
10-20 years	182	2000

A four-hour duration fire in the Technology Park during the maximum day demand period would require water volumes of 480,000 gallons, 502,320 gallons, and 523,680 gallons respectively. The required equalization volumes are 12,960 gallons, 33,413 gallons, and 65,367 gallons respectively for 0-5, 5-10 and 10-20 year development schedules. Table 4.7 summarizes existing City of Kalispell storage and production capacity, required storage and production capacity, and deficiencies for serving the Technology Park.

Table 4.7. Technology Park Storage and Production Capacity Deficiencies

Upper Zone Storage Capacity (gallons)	Production Capacity (gpm, Firm)	Design Period	Required Upper Zone Storage Capacity[3] (gallons)	Required Production Capacity (gpm, Firm)	Upper Zone Storage Deficiency (gallons)	Production Deficiency (gpm)
100,000	3,800 (2,200)[1]	0-5 years	382,800[2]	1,436	282,800	0
		5-10 years	399,900	1,493	299,900	0
		10-20 years	426,600	1,582	326,600	0

[1] Emergency production capacity

[2] Storage volume required to meet a 4 -hour fire flow of 2000 gpm and equalization equal to 25% of the max day demand adjusted for emergency production capacity.

[3] Increasing the production capacity of the system would reduce the amount of storage capacity required.

The existing system is deficient in meeting the recommended fire flow for the Technology Park under emergency conditions. The fire flow requirements could be met by upgrading the emergency power at the booster station and would improve the reliance of the entire system.

4.3.4 Sewer System

Sewer flow projections related to the tech park are summarized in Table 4.8. Sewage collection and treatment has no relationship to Alternative A.

Table 4.8 Technology Park Sewer Flows

Design Condition	0-5 years (gpd)	5-10 years (gpd)	10-20 years (gpd)
Dry Weather Average	7,500	19,250	37,800
Dry Weather Peak Hour	9,755	25,000	49,100
Wet Weather Average	9,975	25,600	50,275
Design Max Day	17,475	44,853	88,075
Design Peak Hour	19,425	49,860	97,900

The existing Kalispell sewer system could handle the flows from the Technology Park under all phases.

4.3.5 Population and Economy

The relationship and importance of the tech park to employment, tax generation, and lease payments to the school trust was previously explored in several of the land use development scenarios of Part I, Chapter 4 of this document. Under Alternative A of Part II, the tech park would not be considered as an option for the property.

Interest in technology-based economic growth has increased over the past decade since high tech business clusters provide excellent catalysts for economic growth via high wage jobs and increased domestic and foreign investment. Supporting infrastructure for high technology job growth generally includes a strong research and development base, capital availability, and a pool of technically trained

labor. How successful an area will be in attracting high technology jobs depends on a region's ability to successfully compete for the amenities high tech companies desire.

The Technology Administration's Office of Technology Policy (OTP) has developed a set of metrics that assess a state's climate for technology based economic growth. The nation's most successful high tech communities demonstrate that science and technology-based businesses exhibit a tendency to cluster in areas with strong technology assets and infrastructure.

Thirty-seven metrics, by five major categories are profiled for all fifty states. Montana, although not known for its high tech based communities, Bozeman excluded, ranks in the middle of the pack. Below are brief explanations of the metrics used and Montana's national rank accordingly.

Metric	Montana Rank (1= best; 50 = worst)
Total R&D expenditures per $1,000 of state gross product	36
Industry performed R&D per gross state product (GSP)	39
Federally performed R&D per $1,000 GSP	10
University performed R&D per $1,000 GSP	8
Federal obligations to R&D per GSP	25
Federal laboratory campus funding per $1,000 GSP	27
Small Business Innovation Research (SBIR) program awards per 10,000 business establishments	27
Average annual dollar award to SBIR program grants per $1,000 of GSP	21
Number of Small Business Technology transfer awards per 10,000 business establishments	7
Average annual dollar award of Small Business Technology transfer grants per $1,000 GSP	4
National Assessment of Educational progress test scores	2
High school completion rates	8
Associate degrees conferred (18-24 years old)	42
Bachelor degrees conferred	17
Science and engineering bachelor's degrees as % of total bachelor's degrees awarded	2
Science and engineering graduate students	28
Recent science and engineering bachelor's degrees in the workforce	27
Masters degree graduates in science and engineering	24
Ph.D.'s in science and engineering	31
Venture capital funds per $1,000 of GSP	47
Average annual Small Business Investment Company funds disbursed	37
Initial public offerings per $1,000 GSP	40
Business incubator availability	48
Patent attorneys and agents per 10,000 businesses	43
Technology intensive establishments	41
State employment in technology intensive industries	44
Percent of technology intensive payroll	44
Technology establishment births	39
Net technology intensive business formations	22
Average number of U.S. patents	39
Inc. 500 companies	44
Technology fast 500 companies	33
Average annual pay (Montana $21,947)	49
Population living above federal poverty level	44
State per capita personal income	47

Labor force participation rate	24
Work force employment	42

Source: Office of Technology Policy, Technology Administration, U.S. Department of Commerce, June 2000.

Comparing Flathead County to national norms with respect to percent of the workforce in Bureau of Labor Statistics defined high technology industries; Flathead County has 6.2% of its workforce in high technology industries. This compares to 8% nationally.

Flathead Valley Community College has also been relatively responsive to local industry needs for training and workforce and development initiatives. First Interstate Bank recently funded a workforce-training laboratory, and plans are underway to secure funding for a comprehensive business incubation center geared toward high technology firms. This venture is a joint partnership between Jobs Now and Flathead Valley Community College.

The proposed technology park for Section 36 is independent of any locally or regionally driven development option, since demand for its services is of a national and global nature. As such, its employment base would not occur at the expense of employment elsewhere in the economy.

Modeling the employment and revenue stream associated with payroll, lease and tax payments, a high technology park could conceivably add payroll of over $96 million (present value to 2001) over the 20-year planning period. Direct payroll over the 20-year period amounts to a conservatively estimated $67.5 million (present value to 2001). Employment, assuming 200 employees in year 2002, would generate an additional 54 jobs in the total economy. Lease payments in present value terms equal $2.8 million, taxes on land and structure equal $.7 million and $1.3 million respectively. Additional technology related employment, associated with the tech park additions, depends on the degree of agglomeration economies facilitated by the original anchor tenant.

4.3.6 Other Infrastructure

The utility services associated with electricity, natural gas, telephone, and fiber optics can be adequately sized and extended to the tech park as necessary according to local purveyors of those services. None of these services would be appropriate to Alternative A.

4.3.7 Aesthetics and Noise

Alternative B will affect aesthetics and noise. Under this alternative, the open space character of the farmed land (Alternative A) will be displaced with urban-type uses. The built environment of the tech park can be softened through architecture requirements and landscaping as anticipated by the Section 36 Neighborhood Plan. Noise will increase from introduction of additional vehicles to the NE ¼. Due to the close proximity of West Reserve Drive and U.S. Highway 93, it is uncertain whether the increased noise levels will be appreciably noticed by adjoining properties. Expected ambient noise levels in the NE ¼ of Section 36 would be in the range of 62-72 dBA, where the lower range probably reflects current values according to the US Highway 93-Somers to Whitefish West Final Environmental Impact Statement.

4.3.8 Access to and Quality of Recreation

As indicated in Part I of this document, recreation opportunities and access to Section 36 is likely to increase with development as compared to Alternative A. The internal roads will be city streets and bicycle routes are proposed along all collector roads. Under Alternative B, landscaped areas will be provided along U.S. Highway 93 and adjacent to all built structures. Subdivision review will help define other open space features. Lease obligations for use of the property and other legal concerns may not offer broad use of common facilities to the general public.

4.3.9 Soils

The soils analysis presented in Part I indicates that the soils of the NE ¼ are suitable for crops and suitable for development. Under Alternative A, soil will continue to be farmed. Under Alternative B, provisions will be made to stock pile all top soil during construction for later use as a medium for landscaping around developed structures.

4.3.10 Wildlife

Use of the NE ¼ by wildlife will not be significantly affected under either of the 2 alternatives since use [by wildlife] is extremely limited under the current management practices.

4.3.11 Vegetation

Farming practices can be maintained under Alternative A. Under alternative B, approximately 60 acres of farmable land will be displaced by development. No native or naturally occurring plants or plant communities will be compromised with development of the property.

4.3.12 Aquifer

The aquifer will not be adversely affected by agriculture or development of the tech park or any cumulative development scenarios for the greater area of Section 36 as described in Part I, Section 4.3.9 of this document.

4.3.13 Air Quality

Air quality is not likely to significantly degrade under Alternative B. Particulate matter is expected to decrease with reduction in wind-blown dust from farming activities.

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